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ABSTRACT

Cross-referenced to instructional objectives defined in a previous publication, (Guidelines to Mathematics, K-6), the Wisconsin Mathematics Test can be used to measure achievement gains over a given year, or to detect student strengths and weaknesses, by correlating missed items with the objectives. It is also possible to compare results on a given objective within a district, school, or class, with those of a selected stratified sample of 1,000 Wisconsin students. For each grade level, mean discrimination indexes range between .34 and .46; reliability ranges between .79 and .94. A mathematics educator survey and independent studies have supported context validity. (The bulk of this document contains test booklets for each grade, answer keys, and directions for administration). (CP)

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Wisconsin Mathematics Test—Grades 1-6

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Wisconsin Department of Public Instruction / William C. Kahl, Superintendent

WISCONSIN MATHEMATICS TEST

GRADES 1 - 6

(Based on the specific student behavioral objectives in Guidelines to Mathematics, K-6, Bulletin Number 141)

Issued by

William C. Kahl, State Superintendent
Wisconsin Department of Public Instruction

Bulletin No. 1626

This project was sponsored cooperatively by the Wisconsin Department of Public Instruction and the Wisconsin University Laboratory Schools.

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FOREWORD

Contemporary mathematical content objectives, agreed upon by a group of respected Wisconsin mathematics educators, were identified in Guidelines to Mathematics, K-6, published three years ago by the Department. We are pleased now to publish a mathematics achievement test for grades 1-6 that is based on those objectives. School districts that accept for their programs the objectives listed in our guide are encouraged to reproduce and use this test.

This achievement test can be used only to assess the accomplishment of cognitive objectives. Since we feel that the affective impact is of equal importance, it should be noted that appreciation of mathematics, liking to do mathematics, and a desire to explore mathematics, are desirable outcomes of a well-balanced school mathematics program.

Our appreciation is extended to the members of the Wisconsin Laboratory School Mathematics Committee for the many long hours of hard work put in during the development of the Wisconsin Mathematics Test.

William C. Kahl

State Superintendent

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HOW TO USE THE WISCONSIN MATHEMATICS TEST

This booklet is designed to be taken apart so that individual pages can be duplicated. The Wisconsin Mathematics Test (WMT) can be used as an achievement assessment instrument or as a diagnostic instrument for grades 1-6.

CRITERION-REFERENCED MEASUREMENT

If primary concern is with measuring the attainment of instructional objectives, the relevance of meaningful criteria to these objectives implies the use of criterion-referenced measurement (CRM). Measurement is not an end in itself; its necessity arises in the fact that, ultimately, someone is going to do something about the extent to which different individuals attain specified instructional objectives.

In mathematics, many units of instruction are intended primarily to prepare the individual to undertake the next unit in the sequence. To the extent that it is reasonable to specify an entering level of competence for this next unit, this level is a meaningful criterion for the present unit. Other accepted objectives in mathematics can also be criterion-referenced.

One way the WMT can be used in CRM is to use it as both a pre-test and a post-test for a given year of instruction, noting student achievement gains on the objectives listed in Guidelines to Mathematics, K-6.

DIAGNOSTIC ASSESSMENT

This test can be used at any time for diagnostic purposes. Each test item is cross-referenced to the corresponding student behavioral objective in Guidelines to Mathematics, K-6. This cross-referencing makes it possible to analyze student strengths and weaknesses through item analysis comparison with objectives.

ADDITIONAL INFORMATION

See the APPENDIX for additional technical information.

Directions for Administering Test

(To be administered in two sittings separated by a recess period.)

MATERIALS

Test booklet
Soft lead pencil
Eraser
Marker (Made from tagboard 2 inches wide and 9 inches long.)

FRONT PAGE

I am going to give each of you a booklet with some arithmetic problems for you to do. Do not open your booklet until I tell you to do so.

PASS OUT THE TEST BOOKLETS AND MARKERS

Look at the front page. Find the star and the word Name. Put your marker on the line under the star. Write your first name and last name on the line after the word Name.

SAMPLE A

We are going to do some arithmetic problems together. Move your marker down to the line under row A.

(Have Sample A on the chalkboard □ △ ○ ▭
☐ ☐ ☐ ☐)

Put a cross in the box under the circle.
(Show how to mark with the sample on the chalkboard.)
(Check to see that each child follows directions for marking.)

SAMPLE B

Move your marker down to the line under row B.
(Check to see that the markers are in the correct place.)

Look at the numerals in row B. Put a cross in the box under the numeral 8. (Repeat) The numeral 8.

SAMPLE C

Look across the page at the next problem, problem C.
Look at the number word. Put a cross in the box beside the numeral that is the same as the number word. (Repeat directions)
(Check to see that each child follows directions.)

NOW TURN THE PAGE

I will read the directions. You will put a cross in the box under the right answer. Listen carefully to what I say. You may not be able to answer all the questions but try to do your best work.

PART ONE (First Sitting)

Page 1	Behavioral Objectives

PUT YOUR MARKER ON THE LINE UNDER THE FIRST PROBLEM.
(Check to see that each child has the correct item.)

1. Look at the set of blocks. Count the blocks in the set. Put a cross in the box under the numeral that tells the number of blocks. 1 - 1 - 1

MOVE YOUR MARKER DOWN TO THE LINE UNDER THE NEXT PROBLEM.

2. Look at the sticks. Put a cross in the box under the stick that is one-half shaded. (Repeat) One-half shaded. 1 - 1 - 2

MOVE YOUR MARKER DOWN TO THE LINE AT THE BOTTOM OF THE PAGE.

Page 1 (continued) Behavioral Objectives

3. Look at the sets of apples in the top row. One of the sets is missing. Put a cross in the box under the set of apples that should be put in the place of the missing set. (Repeat) 1 - 1 - 5

TURN THE PAGE

Page 2

PUT YOUR MARKER ON THE LINE UNDER THE TOP ROW OF PROBLEMS.

4. Look at the first problem. Beside the boxes are names for numbers. Put a cross in the box beside the name for 7. (Repeat) The name for 7. 1 - 2 - 2

5. Look across the page at the next problem. Look at the numerals. Put a cross in the box under the numeral 16. (Repeat) The numeral 16. 1 - 2 - 1

MOVE YOUR MARKER DOWN TO THE LINE UNDER THE NEXT PROBLEMS.

6. Put a cross in the box under the numeral that shows 3 tens and 7 ones. (Repeat) 3 tens and 7 ones. 1 - 2 - 4

7. Look across the page at the next problem. Look at the 2 plus 5. 2 plus 5 is a name for a number. Which choice is another name for the same number? Put a cross in the box beside that choice. 1 - 4 - 3

MOVE YOUR MARKER DOWN TO THE LINE AT THE BOTTOM OF THE PAGE.

Page 2 (continued) — Behavioral Objectives

8. The picture shows that 2 chicks joining 3 chicks will make a set of 5 chicks. Put a cross in the box beside the word that tells the kind of a sentence you would write for this picture. 1 - 4- 1

Subtraction. (Pause) Addition. (Repeat the directions)

TURN THE PAGE

Page 3

PUT YOUR MARKER ON THE LINE UNDER THE TOP ROW OF PROBLEMS.

9. In the box with the ball, write the numeral 60. (Repeat) 60. 1 - 2 - 1

10. Look across the page at the next problem. Look at the 57. Put a cross in the box under the numeral that is in the tens place. (Repeat the directions.) 1 - 2 - 4

MOVE YOUR MARKER DOWN TO THE LINE UNDER THE NEXT PROBLEMS.

11. Look at the set of stars. The numeral 5 tells the number of members in the set of stars. Now look at the other set. Write the numeral in the box that tells the number of members in that set. 1 - 1 - 4

12. Look across the page at the next problem. Look at the number sentence 5 circle 2 equals 3. The circle shows a sign is missing. Put a cross in the box beside the missing sign. 1 - 4 - 5

Page 3 (continued)

Behavioral Objectives

MOVE YOUR MARKER DOWN TO THE LINE UNDER THE NEXT PROBLEM.

13. Look at the sets of dots. Count the dots in each set. Put a cross in the box under the set that has more dots.

1 - 3 - 1

MOVE YOUR MARKER DOWN TO THE LINE AT THE BOTTOM OF THE PAGE.

14. Look at the set of rabbits and the number sentence under it. On the line write a subtraction sentence that goes with the addition sentence 4 plus 2 equals 6. (Repeat the directions: "On the line...) (The answer can be either 6-2=4 or 6-4=2.)

1 - 4 - 4

TURN THE PAGE

Page 4

PUT YOUR MARKER ON THE LINE UNDER THE TOP ROW OF PICTURES.

15. Look at the pictures of the objects. Put a cross under the object that has no edges. (Repeat) No edges.

1 - 7 - 1
and
1 - 7 - 2

MOVE YOUR MARKER DOWN.

16. Look at the pictures of the objects. Put a mark in the box under the cone. (Repeat) The cone.

1 - 7 - 1

MOVE YOUR MARKER DOWN.

17. Look at the pictures. Put a cross in the box under the line segment. (Repeat) The line segment.

1 - 8 - 1

MOVE YOUR MARKER DOWN.

Page 4 (continued) — **Behavioral Objectives**

18. Look at the triangles. Put a cross in the box under the triangle that has a point on the triangle. (Repeat the directions) 1 - 8 - 2

TURN THE PAGE

Page 5

PUT YOUR MARKER ON THE LINE UNDER THE PROBLEM

19. Look at the number line and the arrows below it. Put a cross in the box beside the number sentence that this number line shows. 1 - 12 - 1

MOVE YOUR MARKER DOWN.

20. Look at the number line and the arrows below it. Put a cross in the box beside the number sentence that this number line shows. 1 - 1[illegible] - 1

MOVE YOUR MARKER DOWN.

21. Look at the line segments. Put a cross in the box beside the choice that is true. I will read the choices. (Read the choices to the children.) Listen carefully. 1 - 14 - 1

    AB is the longer segment.
    CD is the longer segment.
    AB is the same length as CD.

TURN THE PAGE

Page 6

PUT YOUR MARKER ON THE LINE SO YOU CAN SEE ALL THE ROWS OF PENNIES.

Page 6 (continued) — Behavioral Objectives

22. Look at the nickel. Put a cross in the box beside the row of pennies that is the same value as one nickel. (Repeat the directions.) 1 - 14 - 2

MOVE YOUR MARKER DOWN.

23. Look at the clocks. Put a cross in the box under the clock that shows three thirty or half past three. 1 - 14 - 3

MOVE YOUR MARKER DOWN.

24. Look at the pictures. Put a cross under the picture of the object that can tell how much a bag of apples weighs. 1 - 14 - 4

TURN THE PAGE

Page 7

PUT YOUR MARKER ON THE LINE UNDER THE PROBLEMS.

25. I am going to read a story problem. Listen carefully. 1 - 15 - 1

Bill had 2 marbles. His friend gave him 5 marbles. How many marbles does Bill have now?

Put a cross in the box beside the number sentence that tells the story of the problem. (Repeat the story problem from "Bill had...")

Page 7 (continued)	Behavioral Objectives
26. Look across the page at the next problem. Look at the number sentences. Which sentence is not true? Put a cross in the box beside the number sentence that is not correct. (Repeat)	1 - 15 - 3
MOVE YOUR MARKER DOWN TO THE LINE UNDER THE PICTURES.	
27. Look at the four pictures of rabbits. Put a cross in the box under the picture that tells the story of the number sentence 3 minus 1 equals 2. (Repeat)	1 - 15 - 4
MOVE YOUR MARKER DOWN TO THE BOTTOM OF THE PAGE.	
28. Thru 31. Look at the problems next to the ball. You will add in all the problems. Write the answers in the boxes. Begin working.	1 - 6 - 1 and 1 - 15 - 2
(Allow time to finish.)	

THE FIRST TESTING PERIOD ENDS HERE.
COLLECT TEST BOOKLETS AND MARKERS.

PART TWO (Second Sitting)

We are going to do more arithmetic problems. Open your booklet to page 8. I will read the directions. You will put a cross in the box under the right answer. Listen carefully.

Page 8	Behavioral Objectives
PUT YOUR MARKER ON THE LINE UNDER THE ROW OF RABBITS. (Check to see that each child has the correct item.)	
32. Look at the gate and the rabbits. Put a cross in the box under the third rabbit from the gate.	1 - 1 - 3
MOVE YOUR MARKER DOWN TO THE LINE UNDER THE NEXT ROW.	
33. Look at the squares. Put a cross in the box under the square that is one-fourth shaded. (Repeat) One-fourth shaded.	1 - 1 - 2
MOVE YOUR MARKER DOWN TO THE LINE AT THE BOTTOM OF THE PAGE.	
34. Look at the sets of flowers in the big box. The set that should come between these two sets is missing. Find the missing set in the row below. Put a cross in the box under the missing set. The set that belongs between the two sets.	1 - 1 - 5

TURN THE PAGE

Page 9

PUT YOUR MARKER ON THE LINE UNDER THE PROBLEMS.

Page 9 (continued) Behavioral Objectives

35. Look at the first problem. Beside the boxes are names for numbers. Put a cross in the box beside a name for eight. (Repeat) A name for 8. 1 - 2 - 2

36. Look across the page at the next problem. Put a cross in the box beside the word five. (Repeat) Five. 1 - 2 - 3

MOVE YOUR MARKER DOWN.

37. Look at the numerals. Put a cross in the box under the numeral that shows 1 ten and 4 ones. (Repeat) 1 - 2 - 4

38. Look across the page at the next problem. Look at the number sentence 3 plus 5 circle 8. The circle shows that a sign is missing. Put a cross in the box beside the sign that will make a true sentence. (Repeat) 1 - 4 - 5

MOVE YOUR MARKER DOWN TO THE LINE AT THE BOTTOM OF THE PAGE

39. The picture shows that separating 1 balloon from 4 balloons leaves a set of 3 balloons. Put a cross in the box beside the word that tells the kind of sentence you would write for this picture. Subtraction. (Pause) Addition. (Repeat the directions) 1 - 4 - 2

TURN THE PAGE

PUT YOUR MARKER ON THE LINE UNDER THE BOXES.

40. In the box with the tree, write the numeral 19. (Repeat) 19. 1 - 2 - 1

41. Look across the page at the next problem. In the box with the lollipop, write the numeral 74. (Repeat) 74. 1 - 2 - 1

MOVE YOUR MARKER DOWN.

42. Look at the 18. Put a cross in the box under the numeral that is in the ones place. (Repeat directions.) 1 - 2 - 4

43. Look across the page at the next problem. Look at the number sentence 4 circle 2 equals 6. The circle shows a sign is missing. Put a cross in the box beside the missing sign. 1 - 4 - 5

MOVE YOUR MARKER DOWN.

44. Look at the sets. Count the members in each set. (Pause for counting.) Put a cross in the box in front of the sentence that is true. I will read the sentences. 7 is less than 5. 7 is equal to 5. 7 is greater than 5. (Repeat the answers.) 1 - 3 - 2

MOVE YOUR MARKER DOWN TO THE BOTTOM OF THE PAGE.

45. Look at the set of rabbits and the number sentence under it. On the line write an addition sentence that goes with the 1 - 4 - 4

Page 10 (continued) — Behavioral Objectives

subtraction sentence 5 minus 2 equals 3. (Repeat the directions from "On the line...") (The answer can be either 2+3 =5 or 3+2=5)

TURN THE PAGE

Page 11

PUT YOUR MARKER ON THE LINE UNDER THE TOP ROW OF PICTURES

46. Look at the pictures of the objects. Put a mark in the box under the object that has a cross on one edge. (Repeat) One edge. — 1 - 7 - 1 and 1 - 7 - 2

MOVE YOUR MARKER DOWN.

47. Look at the pictures of the objects. Put a mark in the box under the cube. (Repeat) The cube. — 1 - 7 - 1

MOVE YOUR MARKER DOWN.

48. Look at the figures. Put a cross in the box under the closed curve. (Repeat) The closed curve. — 1 - 8 - 2

MOVE YOUR MARKER DOWN.

49. Look at the stick and the pencil. About how many pencils can be laid end-to-end along the stick? Put a cross in the box under the numeral. (Repeat directions.) — 1 - 14 - 5

TURN THE PAGE

Page 12.

PUT YOUR MARKER ON THE LINE UNDER THE PROBLEM.

50. Look at the number line and the arrows below it. Put a cross in the box beside the number sentence that this number line shows. 1 - 12 - 1

MOVE YOUR MARKER DOWN.

51. Look at the number line and the arrows below it. Put a cross in the box beside the number sentence that this number line shows. 1 - 12 - 1

MOVE YOUR MARKER DOWN.

52. Look at the line segments. Put a cross in the box beside the choice that is true. I will read the choices. (Read the choices to the children.) Listen carefully. 1 - 14 - 1

EF is the shorter segment.
GH is the shorter segment.
EF is the same length as GH.

TURN THE PAGE

Page 13

PUT YOUR MARKER ON THE LINE UNDER ALL THE ROWS OF MONEY

53. I am going to read a story problem. Listen carefully. 1 - 14 - 2

Tom bought a toy car for 7 cents. He gave the storekeeper a dime. How much change did he get?

Put a cross in the box beside the change Tom got back.

Page 13 (continued) — Behavioral Objectives

(Repeat the story problem from "Tom bought...")

MOVE YOUR MARKER DOWN.

54. Look at the clocks. Put a cross in the box under the clock that shows six o'clock. (Repeat) Six o'clock. — 1 - 14 - 3

MOVE YOUR MARKER DOWN.

55. Look at the pictures. Put a cross under the picture of the object that can show the temperature. — 1 - 14 - 4

TURN THE PAGE

Page 14

PUT YOUR MARKER ON THE LINE UNDER THE PROBLEMS.

56. I am going to read a story problem. Listen carefully. — 1 - 15 - 1

Jim had 4 pieces of candy.
He ate 2 pieces of candy.
How many pieces of candy
does he have now?

Put a cross in the box beside the number sentence that tells the story of the problem. (Repeat the story problem from "Jim had...")

57. Look across the page at the next problem. Look at the number sentences. Which sentence is not true? Put a cross in the box — 1 - 15 - 3

Page 14 (continued) Behavioral Objectives

beside the number sentence that is not correct. (Repeat)

MOVE YOUR MARKER DOWN TO THE LINE UNDER THE PICTURES.

58. Look at the four pictures of birds. Put a cross in the box under the picture that tells the story of the number sentence 2 plus 3 equals 5. (Repeat) — 1 - 15 - 4

MOVE YOUR MARKER DOWN TO THE BOTTOM OF THE PAGE.

59. Thru 62. Look at the problems next to the balloon. You will subtract in all the problems. Write the answers in the boxes. Begin working. (Allow time to finish.) — 1 - 6 - 1 and 1 - 15 - 2

END OF SECOND TESTING PERIOD.
COLLECT TEST BOOKLETS AND MARKERS.

MATHEMATICS TEST
FIRST GRADE

Name ______________________________
last first

Boy____ Girl____

Grade ______________________________

School ______________________________

Teacher ______________________________

City ______________________________

State ______________________________

Date of Testing ______________________________
year month day

Date of Birth ______________________________
year month day

Age ______________________________
years months

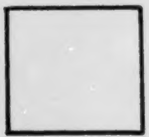
TEST SCORES

Number correct ____
Number wrong ____
Number omitted ____
Total test items - 62

☆ Name ______________________________

Samples

A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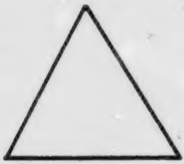
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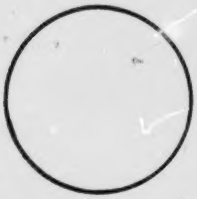
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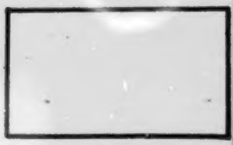
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B

6	7	8	9
☐	☐	☐	☐

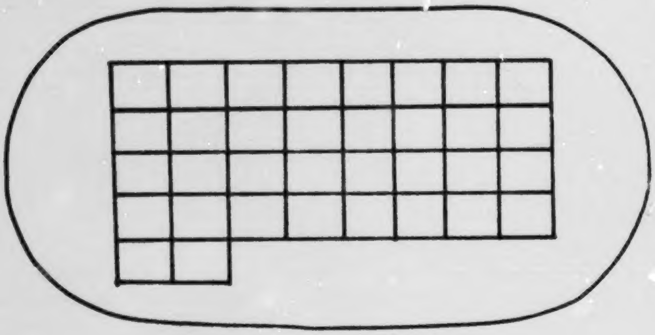
C

two

☐ 0
☐ 1
☐ 2
☐ 3

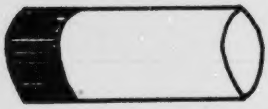
Part One

1



33 ☐ 34 ☐ 35 ☐ 45 ☐

2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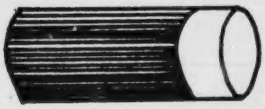
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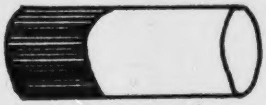
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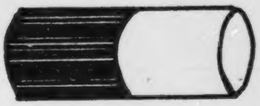
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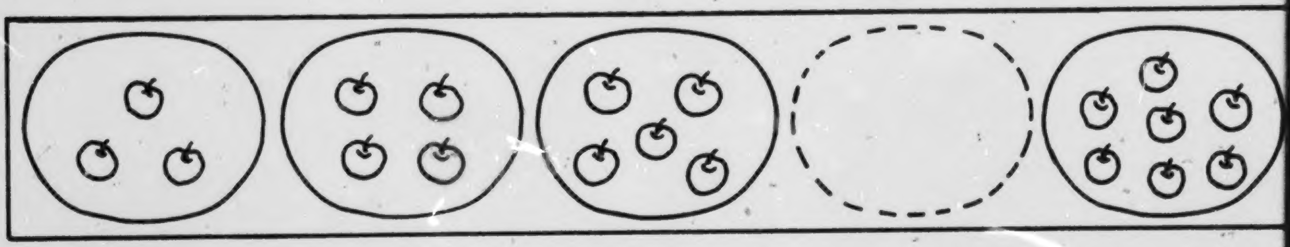

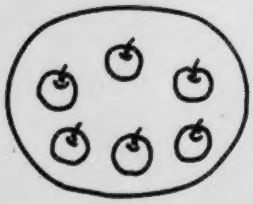
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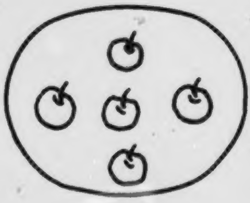
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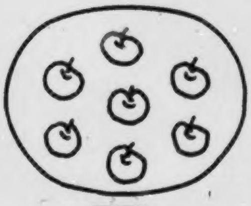
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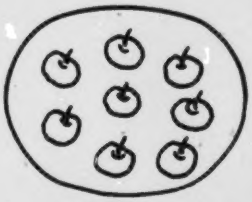
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4

☐ 3 + 4
☐ 8 - 2
☐ 1 + 7
☐ 7 - 2

5

19	16	66	61
☐	☐	☐	☐

6

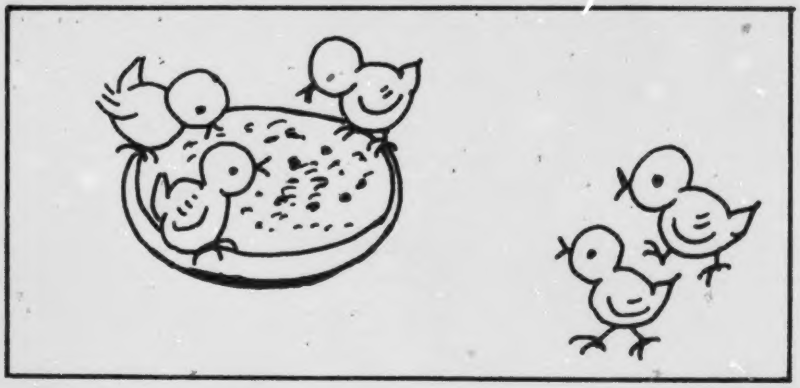
17	23	37	73
☐	☐	☐	☐

7

2 + 5

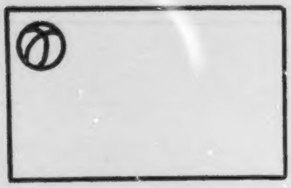
☐ 2 + 3
☐ 5 + 3
☐ 2 + 4
☐ 5 + 2

8



☐ Subtraction
☐ Addition

9

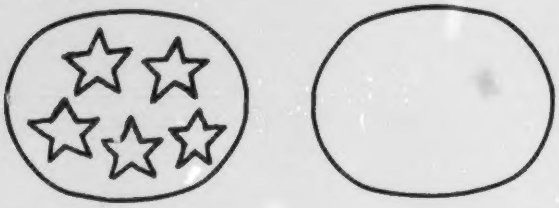


10

57

☐ ☐

11



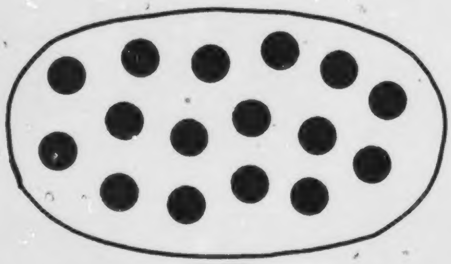
5 ☐

12

5 ○ 2 = 3

☐ −
☐ +
☐ <
☐ =

13



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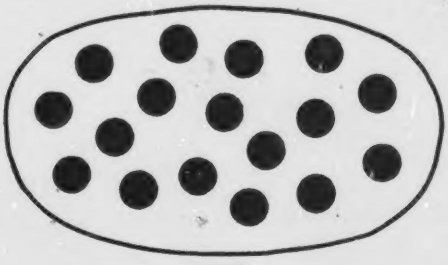

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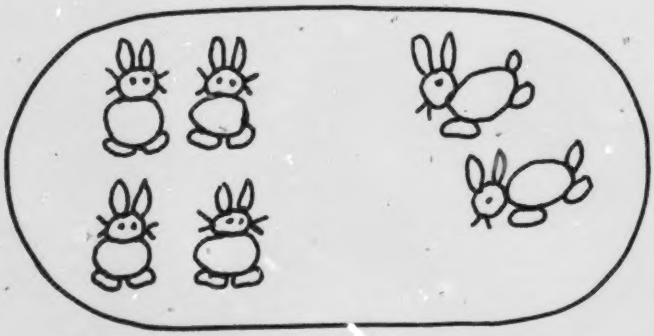
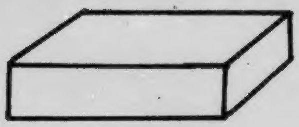
14



4 + 2 = 6 ____________________

15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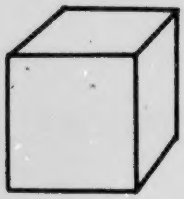
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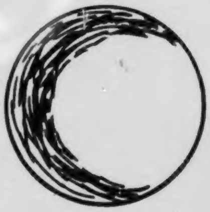
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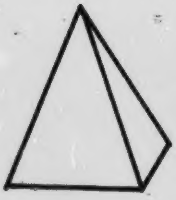
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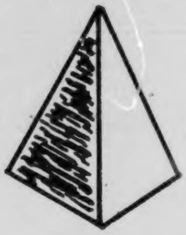
16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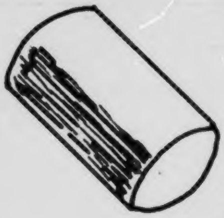
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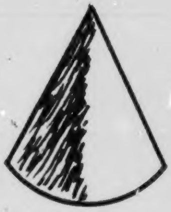
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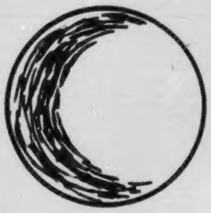
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17

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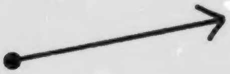
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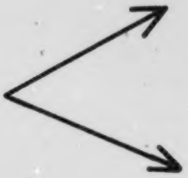
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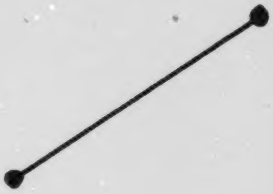
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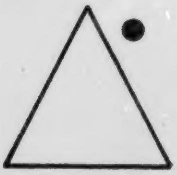
18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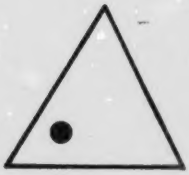
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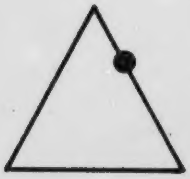
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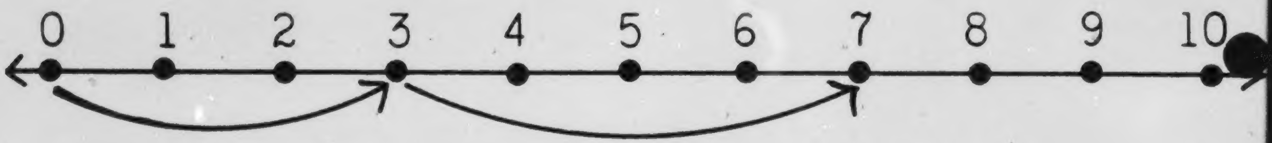
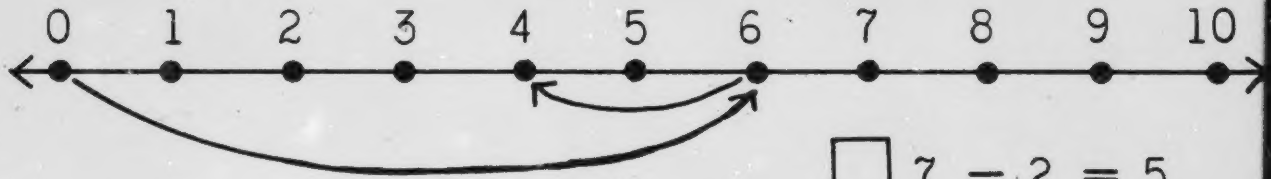
19


0
1
2
3
4
5
6
7
8
9
10

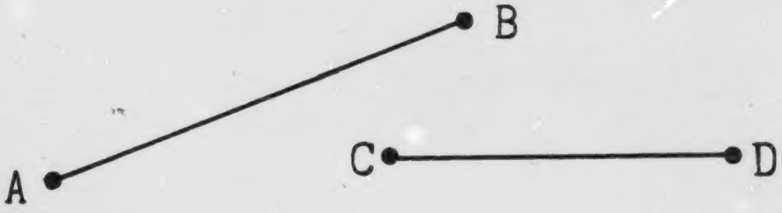
☐ 3 + 5 = 8
☐ 5 + 2 = 7
☐ 3 + 4 = 7
☐ 4 + 2 = 6

20


0
1
2
3
4
5
6
7
8
9
10

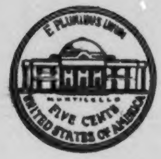
☐ 7 − 2 = 5
☐ 5 − 1 = 4
☐ 5 − 3 = 2
☐ 6 − 2 = 4

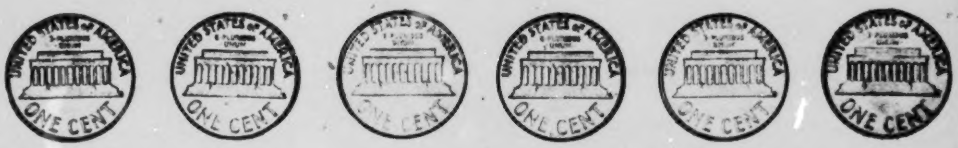
21

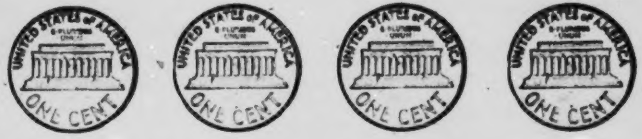


☐ AB is the longer segment.
☐ **CD** is the longer segment.
☐ AB is the same length as CD.

22


E PLURIBUS UNUM
MONTICELLO
FIVE CENTS
UNITED STATES OF AMERICA

☐ 
UNITED STATES of AMERICA
ONE CENT

☐ 
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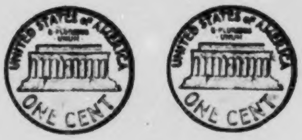
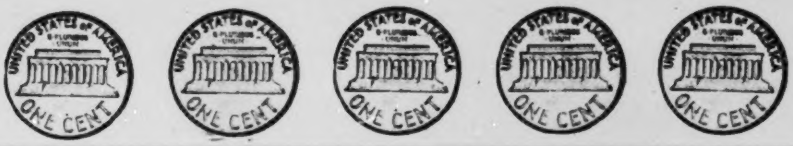
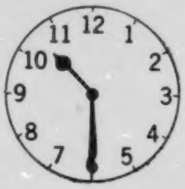
ONE CENT

☐ 
UNITED STATES of AMERICA
ONE CENT

☐ 
UNITED STATES of AMERICA
ONE CENT

23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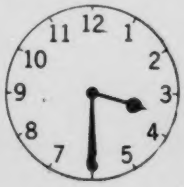
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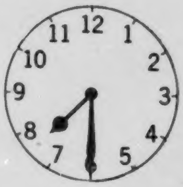
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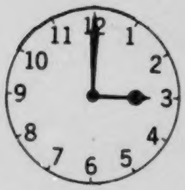
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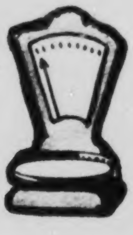
24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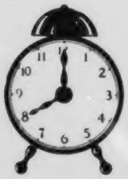
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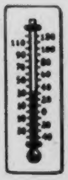
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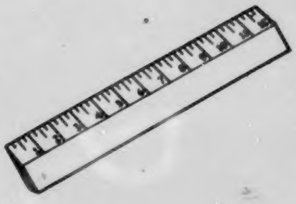

☐

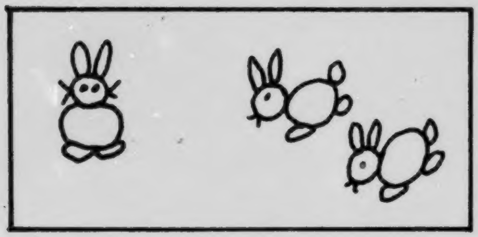
25

☐ 5 − 2 = ____
☐ 2 + 5 = ____
☐ 2 + 3 = ____
☐ 7 − 2 = ____

26

☐ 3 + 4 = 7
☐ 6 + 2 = 7
☐ 4 + 3 = 7
☐ 5 + 2 = 7

27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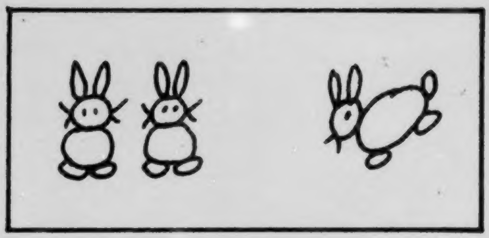
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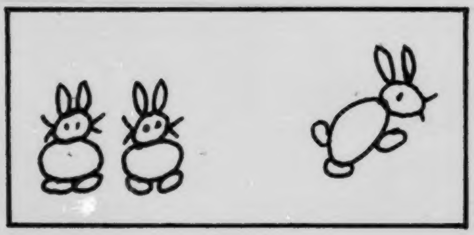
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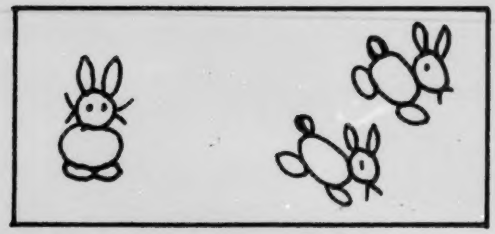
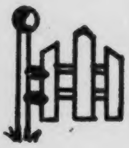

☐

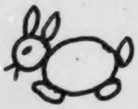
28 - 31

3 + 4 = ☐
6 + 2 = ☐
8 + 1 = ☐
0 + 2 = ☐

Part Two

32

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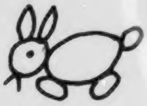
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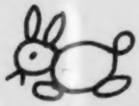
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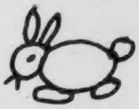
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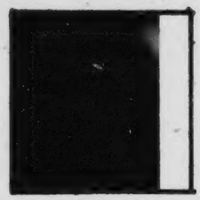
33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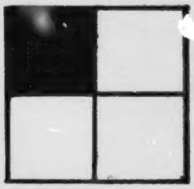
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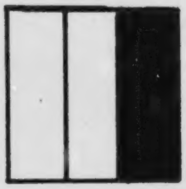
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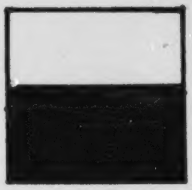
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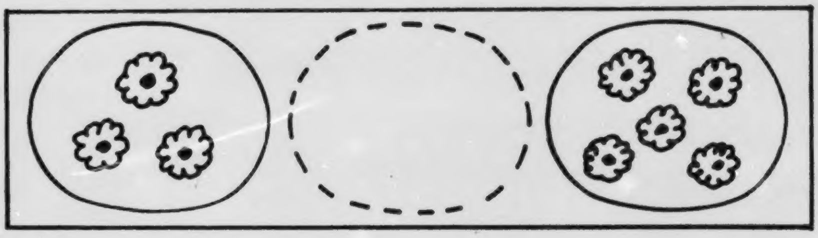
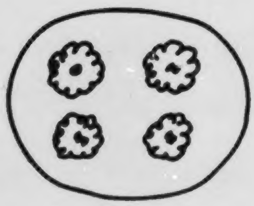
34

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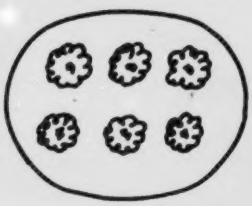
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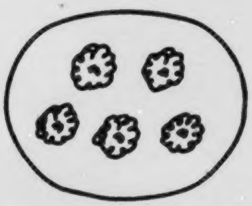
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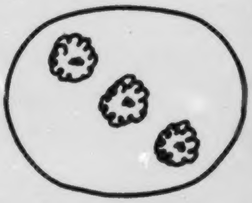

☐

35

☐ 8 − 2
☐ 6 + 3
☐ 10 − 2
☐ 8 + 1

36

☐ four
☐ eight
☐ five
☐ three

37

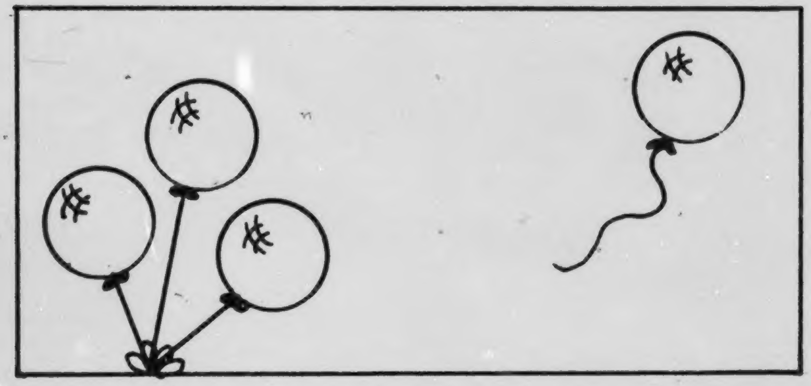
12	14	16	41
☐	☐	☐	☐

38

3 + 5 ○ 8

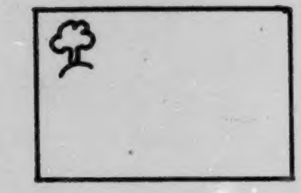
☐ <
☐ −
☐ +
☐ =

39



☐ Subtraction
☐ Addition

40



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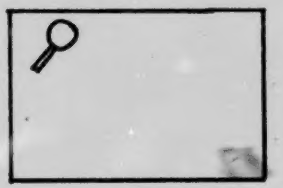


42

18

☐☐

43

4 ○ 2 = 6

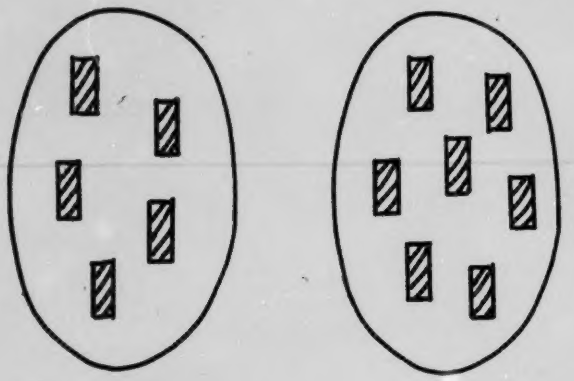
☐ +

☐ <

☐ =

☐ −

44

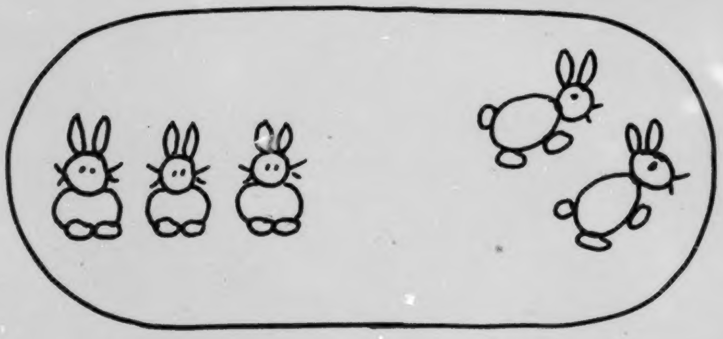


☐ 7 is less than 5.

☐ 7 is equal to 5.

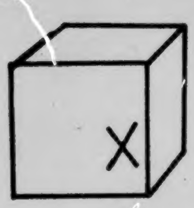
☐ 7 is greater than 5.

45



5 - 2 = 3 ______________________

46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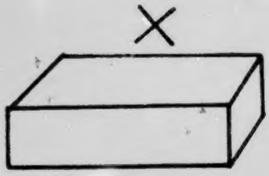
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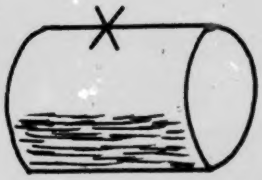
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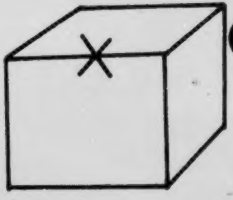
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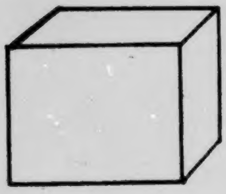
47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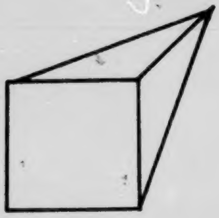
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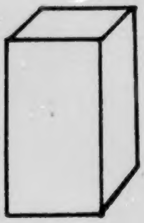
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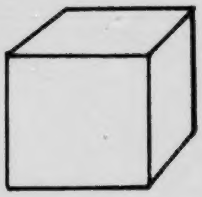
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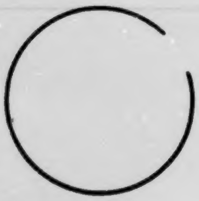
48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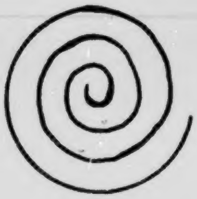
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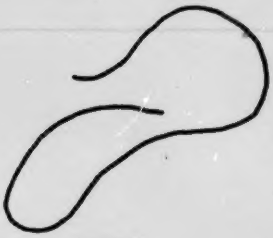
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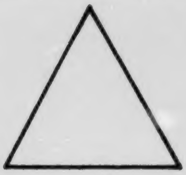
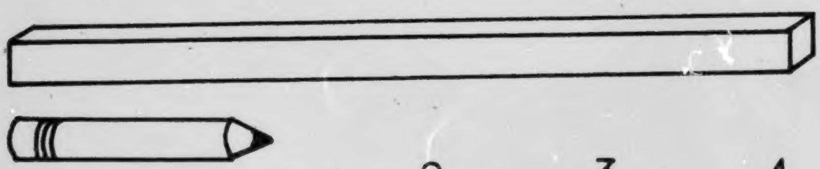
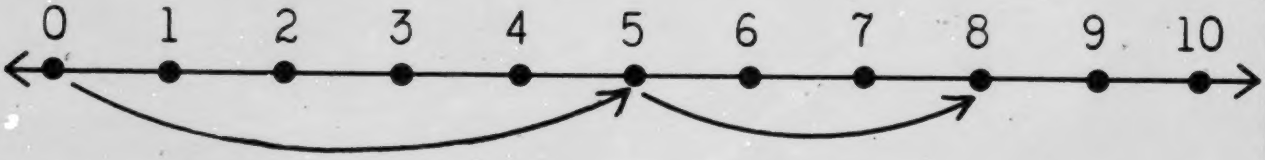

☐

49



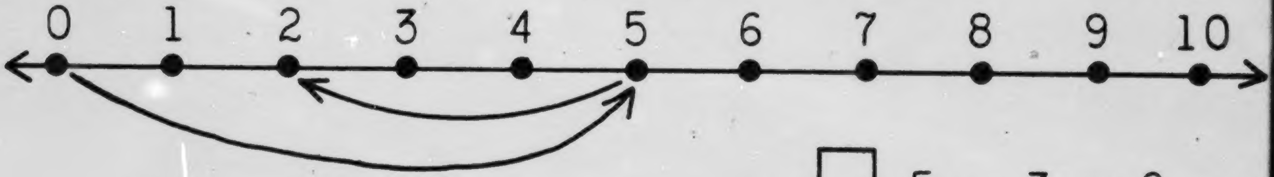
2 ☐ 3 ☐ 4 ☐ 5 ☐

50


0
1
2
3
4
5
6
7
8
9
10

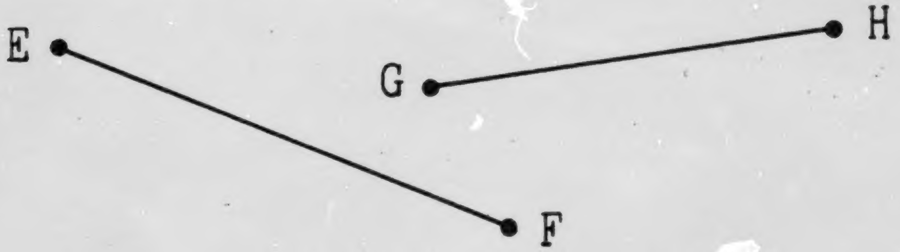
☐ 6 + 2 = 8
☐ 5 + 3 = 8
☐ 0 + 6 = 6
☐ 5 + 2 = 7

51


0
1
2
3
4
5
6
7
8
9
10

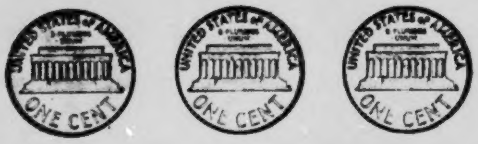
☐ 5 − 3 = 2
☐ 5 − 1 = 4
☐ 6 − 4 = 2
☐ 5 − 2 = 3

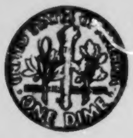
52

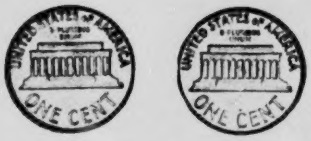


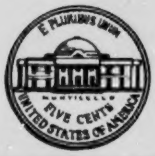
☐ EF is the shorter segment.
☐ GH is the shorter segment.
☐ EF is the same length as GH.

53

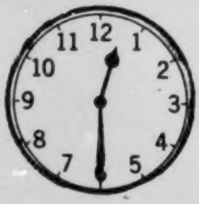
☐ 
UNITED STATES of AMERICA
ONE CENT

☐ 
ONE DIME

☐ 
UNITED STATES of AMERICA
ONE CENT

☐ 
E PLURIBUS UNUM
MONTICELLO
FIVE CENTS
UNITED STATES OF AMERICA

54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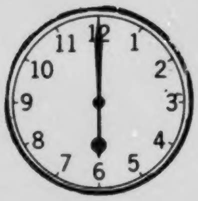
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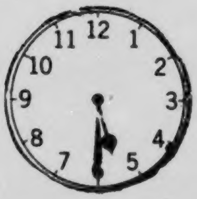
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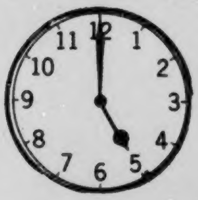
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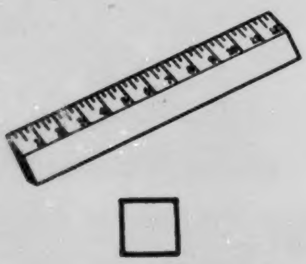
55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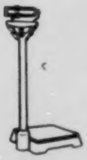
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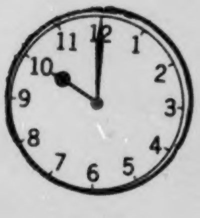
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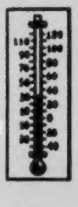

☐

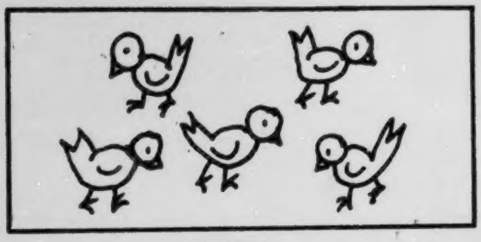
56

☐ 5 + 2 = ____
☐ 4 + 2 = ____
☐ 4 − 2 = ____
☐ 6 − 2 = ____

57

☐ 6 + 3 = 9
☐ 8 + 1 = 9
☐ 7 + 3 = 9
☐ 4 + 5 = 9

58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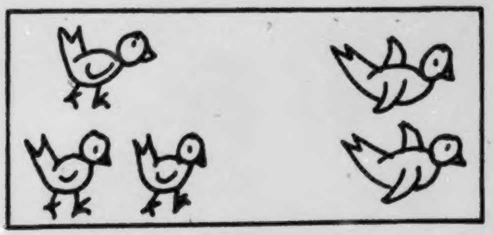
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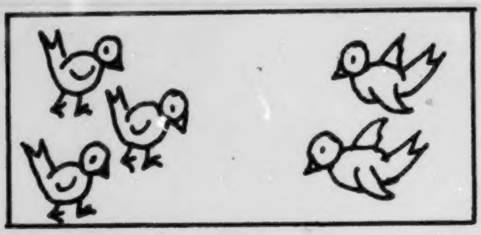
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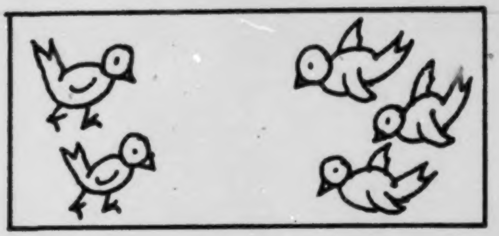

☐

59 - 62

6 − 2 = ☐

7 − 0 = ☐

3 − 3 = ☐

10 − 4 = ☐

FIRST GRADE ANSWER KEY

PART ONE Page 1	Page 2	Page 3	Page 4	Page 5
1 - B	4 - A	9 - 60	15 - C	19 - C
2 - D	5 - B	10- A	16 - C	20 - D
3 - A	6 - C	11 - 0	17 - D	21 - A
	7 - D	12 - A	18 - C	
	8 - B	13 - B		
		14 - 6-2 =4 or 6-4 =2		

Page 6	Page 7	PART TWO Page 8	Page 9	Page 10
22 - D	25 - B	32 - C	35 - C	40 - 19
23 - B	26 - B	33 - B	36 - C	41 - 74
24 - A	27 - C	34 - A	37 - B	42 - B
	28 - 7		38 - D	43 - A
	29 - 8		39 - A	44 - C
	30 - 9			45 -
	31 - 2			3+2 =5 or 2+3 =5

Page 11	Page 12	Page 13	Page 14	
46 - D	50 - B	53 - A	56 - C	
47 - D	51 - A	54 - B	57 - C	
48 - D	52 - B	55 - D	58 - C	61 - 0
49 - B			59 - 4	62 - 6
			60 - 7	

Directions for Administering Test

(To be administered in two sittings separated by a recess period.)

MATERIALS

Test booklet
Soft lead pencil
Eraser

FRONT PAGE

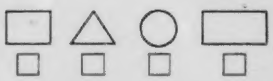
I am going to give each of you a booklet with some arithmetic problems for you to do. Do not open your booklet until I tell you to do so.

PASS OUT THE TEST BOOKLETS

Look at the front page. Find the star and the word Name. Write your first name and last name on the line after the word Name.

SAMPLE A

We are going to do some arithmetic problems together.

(Have Sample A on the chalkboard )

Put a cross in the box under the circle.
(Show how to mark with the sample on the chalkboard.)
(Check to see that each child follows directions for marking.)

SAMPLE B

Look at the numerals in row B. Put a cross in the box under the numeral 8.

(Repeat) The numeral 8.

SAMPLE C

Look across the page at the next problem, problem C. Look at the number word. Put a cross in the box beside the numeral that is the same as the number word. (Repeat directions)

(Check to see that each child follows directions.)

NOW TURN THE PAGE

Look at the top of the page where it says, "Sample." Put your finger on the word "Sample." The number sentence in the box says: "2 + 5 is what?" Now look at the letters and numbers under the number sentence. A - 5, B - 6, C - 7, D - 8. Which of the numbers will make the number sentence true? Yes, it is 7, so put a cross on the letter in front of the number seven, because this is the correct answer. We will mark all of our answers in this way.

I will read the directions and you will put a cross on the letter in front of the correct answer.

Listen carefully.

PAGE 1	Behavioral Objectives
1. Find the numeral four hundred five. Mark the letter in front of the numeral four hundred five.	2 - 2 - 1
2. Which of the expanded numerals is four hundred nine? Mark the letter in front of	2 - 2 - 5

PAGE 1 (continued)

Behavioral Objectives

the expanded numeral for four hundred nine.

3. Look at the box with the tree in it. Write the numeral seven hundred sixty in this box. 2 - 2 - 1

4. Look at the boxes with the numerals in them. Complete the number pattern. 2 - 2 - 3

5. Look at the box. See the numbers, 6 + 3, 5 + 4, 7 + 2. Find another name for these numbers. Mark the letter in front of another name for the numbers in the box. 2 - 2 - 2

6. Which of the following is the order of counting numbers? Mark the letter in front of the numbers in the order of counting numbers. 2 - 3 - 5

7. Which of the following number sentences is true? Mark it. 2 - 4 - 6

TURN THE PAGE

PAGE 2

8. What number comes between 49 and 51? 2 - 3 - 3

9. What numbers come just before and just after 56? 2 - 3 - 4

10. Look at the number sentence in the box. Find the number which will make the sentence true. Mark it. 2 - 6 - 3

PAGE 2 (continued)

	Behavioral Objectives
11. Look at the number sentence in the box. Mark the letter in front of the symbol which will make the sentence true.	2 - 15 - 4
12. Which of the following addition problems is true? Mark it.	2 - 6 - 2
13. Look at the number sentence in the box. Find the picture that goes with the number sentence. Mark it.	2 - 15 - 2
14. Look at the circle. The shaded part of the circle is: A. one half of the circle. B. one fourth of the circle. C. one third of the circle. D. two thirds of the circle. Mark the letter in front of the true statement.	2 - 1 - 3

TURN THE PAGE

PAGE 3

15. Look at the pictures of the sticks. Mark the letter of the picture which shows three hundred forty two sticks.	2 - 2 - 4
16. Find the sentence which is true. Mark it.	2 - 3 - 1

PAGE 3 (continued)

Behavioral Objectives

17. Look at the number sentence. Mark the letter in front of the sign which is missing from the number sentence. 2 - 3 - 2

TURN THE PAGE

PAGE 4

18. Look at the picture of sticks in the box. Find another picture which shows the same number of sticks as the sticks in the box. Mark it. 2 - 2 - 6

19. Which of the following statements is true? Mark the letter in front of the statement which is true. 2 - 4 - 1

A. Eight hundred sixty four million is the largest number there is.

B. One hundred ninety nine million, nine hundred ninety nine thousand, nine hundred ninety nine is the largest number there is.

C. One trillion is the largest number there is.

D. There is no largest number.

20. Look at the figures. Which figure is a cylinder? What is the number of that figure? Find the numbers below

PAGE 4 (continued)

Behavioral Objectives

the figures and mark the letter in front of the number of the cylinder. 2 - 7 - 1

TURN THE PAGE

PAGE 5

21. The black duck is leading the ducks to the pond. Which duck in line has an X on it? Mark the letter in front of the word that tells us. 2 - 1 - 2

22. Look at the picture of the ruler. The numbered units are inches. The arrow points towards: 2 - 14 - 1

    A. a unit.
    B. a half unit.
    C. a third unit.
    D. an eighth unit.

    Mark the statement which makes the sentence true.

23. In the picture of the measuring tools, what is the numeral under the measuring tool you would use to measure the length of a pencil. Mark the letter in front of that numeral. 2 - 14 - 3

24. What is the time shown on the clock? Find it and mark it. 2 - 14 - 4

25. Look at the numeral in the box. What number is 60 + 12? 2 - 15 - 5

PAGE 5 (continued)

	Behavioral Objectives
26 - 27. Look at each number sentence. A number is missing. Mark the letter in front of the numeral which will make the number sentence true.	2 - 15 - 1 and 2 - 6 - 1

TURN THE PAGE

PAGE 6

28., 29., 30., 31. Look at each number sentence. A number is missing. Mark the letter in front of the numeral which will make the number sentence true. Be sure to watch the signs. Some number sentences are addition sentences and some are subtraction sentences.	2 - 15 - 1 and 2 - 6 - 1
32. Which of the following statements is not true? Mark the letter in front of that statement.	2 - 4- 3
33. Look at the figure.	2 - 8 - 1

Point A:

A. stands for a line.
B. stands for a line segment.
C. stands for an angle.
D. stands for a place on the line.

Mark the letter in front of the statement which finishes the sentence correctly.

34. Look at the line segments.

PAGE 6 (continued)

Behavioral Objectives

Which of the line segments appears to be congruent? Mark the letter in front of the names of the line segments which appear to be congruent. 2 - 10 - 2

TURN THE PAGE

PAGE 7

35. Look at the picture. This figure is: 2 - 8 - 3

    A. a simple curve.
    B. a line segment.
    C. a simple closed curve.
    D. a polygon.

    Mark the statement which is true.

36. Look at the figure. Listen carefully.

    A. The square is outside the circle.
    B. The circle is outside the triangle.
    C. The triangle is outside the square. 2 - 8 - 5
    D. The triangle is outside the circle.

    Mark the statement which is true.

37. Look at the number line. This number line shows counting by: 2 - 12 - 1

    A. 10's
    B. 6's
    C. 2's
    D. 5's

    Mark the one which is true.

PAGE 7 (continued)

Behavioral Objectives

Close your book. - Collect books.

Second Sitting

PART II

Today we are going to play some other arithmetic games. Open your book to page 8. Look at example number 38.

38. Find the numeral eight hundred seventy. Mark the letter in front of the numeral eight hundred seventy. 2 - 2 - 1

39. Look at the box with the flower in it. Write the numeral nine hundred ninety nine in this box. 2 - 2 - 1

40. Look at the boxes with the numerals in them. Complete the number pattern. 2 - 2 - 3

41. Look at the box. See the numbers, 5 - 4, 3 - 2, 4 - 3. Find another name for these numbers. Mark the letter in front of another name for the numbers in the box. 2 - 2 - 2

42. What number comes between 208 and 210? 2 - 3 - 3

43. What numbers come just before and just after 89? 2 - 3 - 4

44. Look at the number sentence. Mark the letter in front of the sign which is missing from the number sentence. 2 - 3 - 2

TURN THE PAGE

PAGE 9	**Behavioral Objectives**
45. Listen carefully. Jose has 25¢. He bought 17¢ worth of candy. How much change does he get? Mark the letter in front of the change Jose will get.	2 - 14 - 5
46. Listen carefully. I will read a story problem. Mary finds she can serve 3 of her friends from a pint of ice cream. How many can she serve from a quart of ice cream? Mark the letter in front of the number which tells how many friends she can serve from a quart of ice cream.	2 - 14 - 2
47. On the scale shown, how much does the box weigh? Mark it.	2 - 14 - 2
48 - 49. Look at each number sentence. A number is missing. Mark the letter in front of the numeral which will make the number sentence true. Be sure to watch the signs.	2 - 15 - 1 and 2 - 6 - 1
TURN THE PAGE	
Page 10	
50., 51., 52., 53. Look at each number sentence. A number is missing. Mark the letter in front of the numeral which will make the number sentence true. Be sure to watch the signs. Some number sentences	2 - 15 - 1 and 2 - 6 - 1

PAGE 10 (continued)

Behavioral Objectives

are addition sentences and some are subtraction sentences.

54. Which one of the numbers makes the sentence true? 2 - 4 - 2

55. Look at the number sentence. Mark the letter in front of the symbol which will make the sentence true. 2 - 15 - 4

56. Look at the number sentence in the box. You may use the number line to find the number which will make the sentence true. Mark it. 2 - 15 - 3

57. Which of the following number sentences is true? Mark it. 2 - 4 - 6

TURN THE PAGE

PAGE 11

58. The picture shows that three sets of four objects are joined together to make a new set. Mark the letter in front of the word that tells what kind of number sentence you would write for this picture. 2 - 4 - 4

    A. Subtraction
    B. Division
    C. Multiplication

59. Look at the number sentence in the box. Find the number which will make the sentence true. Mark it. 2 - 6 - 3

PAGE 11 (continued)

	Behavioral Objectives
60. Look at the number sentence in the box. Find the number which will make the sentence true. Mark it.	2 - 6- 3
61. Which number is the same as fifty nine? Mark the letter in front of the number which is the same as fifty nine.	2 - 15 - 5
62. Look at the number sentence in the box. Find the picture that goes with the number sentence. Mark it.	2 - 15 - 2
63. Look at the number sentence. Mark the letter in front of the sign which is missing from the number sentence.	2 - 3 - 2
64. The clown with the balloon is the leader. Which clown has a line around him? Mark the letter in front of the word that tells us.	2 - 1 - 2

TURN THE PAGE

PAGE 12

65. Look at the addition table. Find the squares with the missing numbers. What pattern is formed by the missing numbers?	2 - 4 - 5

The pattern formed is:
A. 5, 7, 9, 11, 13, 15.
B. 3, 6, 9, 12, 15, 18.
C. 4, 6, 8, 10, 12, 14.
D. 3, 4, 5, 6, 7, 8.

PAGE 12 (continued)

Behavioral Objectives

66. Look at the square. The shaded part of the square is: 2 - 1 - 3

A. one half of the square.
B. one third of the square.
C. three thirds of the square.
D. one fourth of the square.

Mark the letter in front of the true statement.

TURN THE PAGE

PAGE 13

67. Look at the picture of sticks in the box. Find another picture which shows the same number of sticks as the sticks in the box. Mark it. 2 - 2 - 6

68. Look at the picture of the sticks. Find the numeral that tells how many sticks there are. Mark it. 2 - 1 - 1

TURN THE PAGE

PAGE 14

69. Look at the figures. Which one is a closed curve? Mark the letter under the closed curve. 2 - 8 - 4

70. Look at the three figures. Listen carefully. 2 - 8 - 5

A. The circle is inside the square.
B. The square is inside the triangle.
C. The square is inside the

PAGE 14 (continued)

Behavioral Objectives

circle.
D. The circle is inside the triangle.

Mark the statement which is true.

71. Look at the picture of the line segment and the ruler. The line segment AB is: 2 - 14 - 2

A. 4 1/2 inches long.
B. 4 inches long.
C. 3 inches long.
D. 2 inches long.

Mark the statement which is true.

TURN THE PAGE

PAGE 15

72. Look at the line segment. Mark the statement which is true. 2 - 8 - 1

This line segment
A. has no points.
B. is a set of many points.
C. is a set of 2 points.
D. is a set of 400 points.

73. Look at the picture of the line. This straight line: 2 - 8 - 2

A. is a set of points which stops where the drawing of the line ends.
B. is a set of points which stops at the end of this paper.
C. has end points.
D. is a set of points which never ends.

Behavioral Objectives

Mark the statement which is true.

74. Look at the triangles. Which triangles appear to be congruent? Mark the letter in front of the numbers which tell which triangles appear to be congruent. 2 - 10 - 1

MATHEMATICS TEST
SECOND GRADE

Name ______________________________
last first

Boy____ Girl____

Grade ______________________________

School ______________________________

Teacher ______________________________

City ______________________________

State ______________________________

Date of Testing ______________________________
year month day

Date of Birth ______________________________
year month day

Age ______________________________
years months

TEST SCORES

Number correct ____

Number wrong ____

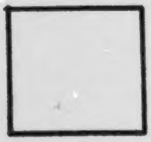
Number omitted ____

Total test items - 74

☆ Name ______________________________

Samples

A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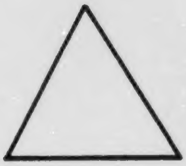
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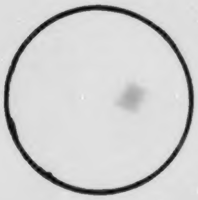
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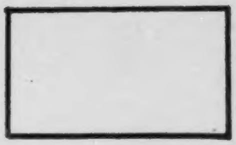

☐

B

6 ☐ 7 ☐ 8 ☐ 9 ☐

C

two

☐ 0
☐ 1
☐ 2
☐ 3

Second Grade - Part I

Sample :

2 + 5 = ☐

A. 5

B. 6

C. 7

D. 8

1.

A. 4050

B. 405

C. 4005

D. 40050

2.

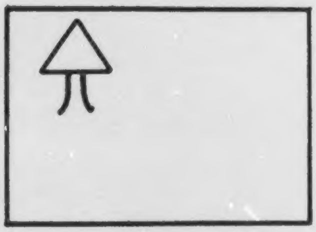
A. 400 + 90 + 0

B. 900 + 40 + 0

C. 400 + 40 + 9

D. 400 + 0 + 9

3.



4.

15	20	25			

5.

6 + 3, 5 + 4, 7 + 2...

A. 9 + 1

B. 1 + 8

C. 7 + 3

D. 5 + 6

6.

A. 58, 59, 60, 61

B. 59, 61, 63, 62

C. 73, 70, 71, 72

D. 72, 74, 73, 76

7.

A. 7 - 0 = 0

B. 7 - 6 = 0

C. 7 - 7 = 0

D. 7 - 8 = 0

8.

49, ______, 51

A. 48

B. 52

C. 50

D. 47

9.

______, 56, ______

A. 55 and 57

B. 55 and 58

C. 53 and 56

D. 54 and 57

10.

4 X 3 = ☐

A. 12

B. 7

C. 43

D. 16

11.

4 ☐ 3 = 7

A. +

B. -

C. <

D. X

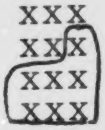
12.

A.	B.	C.	D.
7	4	8	9
1	3	6	0
2	9	2	4
12	16	20	14

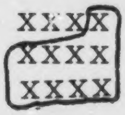
13.

☐ - 7 = 5

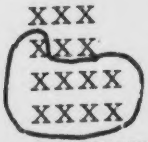
A.



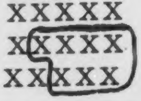
B.



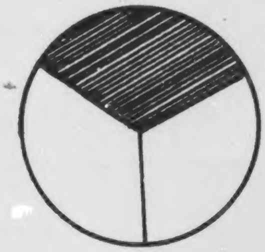
C.



D.



14.



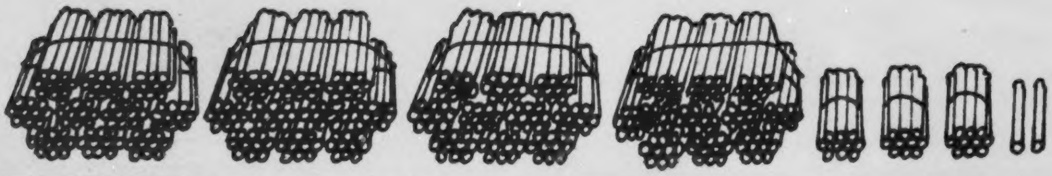
A. one half of the circle.

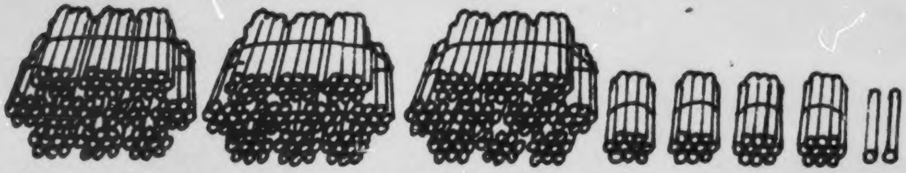
B. one fourth of the circle.

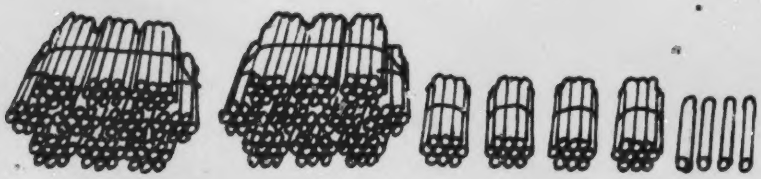
C. one third of the circle.

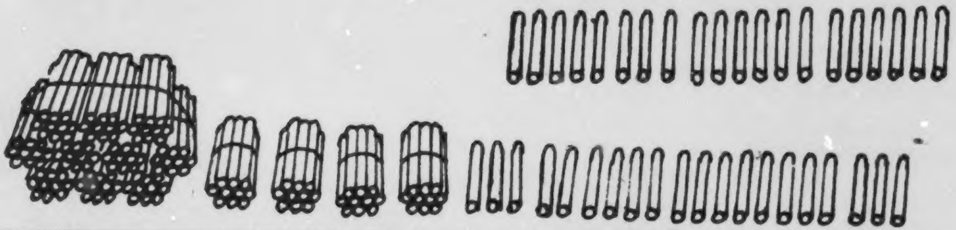
D. two thirds of the circle.

15.

A. 

B. 

C. 

D. 

16.

A. 5 is greater than 7.

B. 7 is less than 8.

C. 7 equals 6.

D. 9 is greater than 10.

17.

23 ○ 48

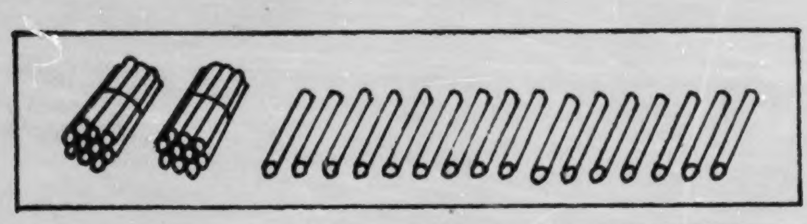
A. =

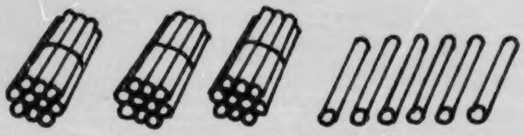
B. <

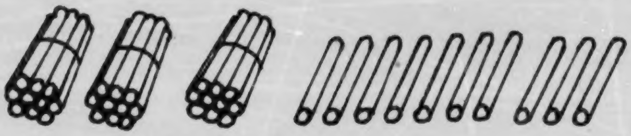
C. X

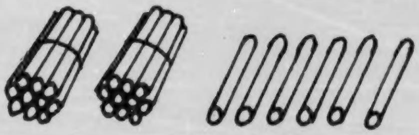
D. >

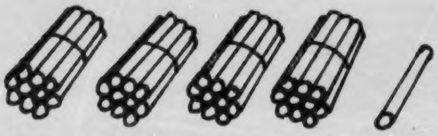
18.



A. 

B. 

C. 

D. 

19.

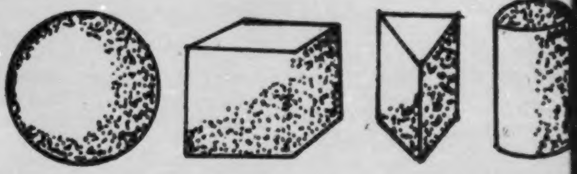
A. 864,000,000 is the largest number there is.

B. 199,999,999 is the largest number there is.

C. One trillion is the largest number there is.

D. There is no largest number.

20.



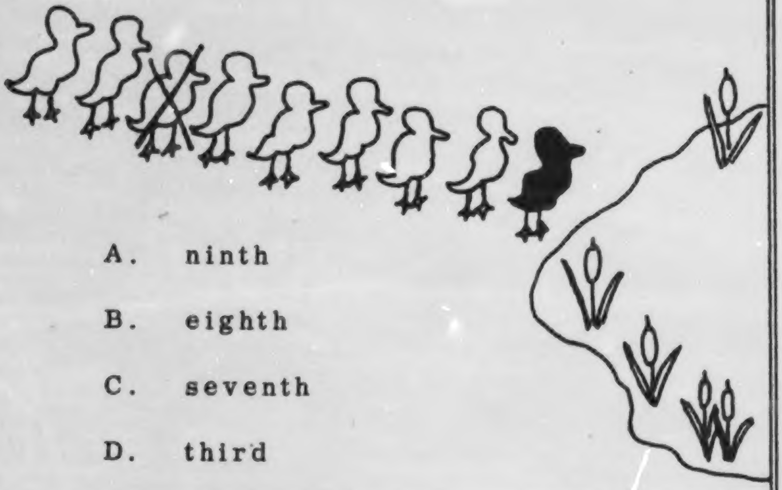
A. 1

B. 2

C. 3

D. 4

21.



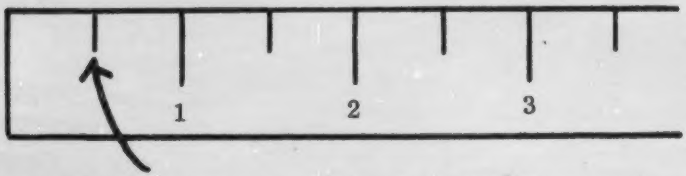
A. ninth

B. eighth

C. seventh

D. third

22.



This arrow points towards:

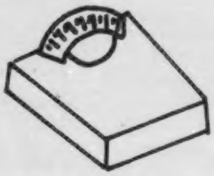
A. a unit.

B. a half unit.

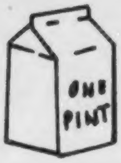
C. a third unit.

D. an eighth unit.

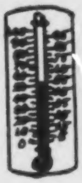
23.



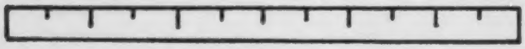
1



2



4



3

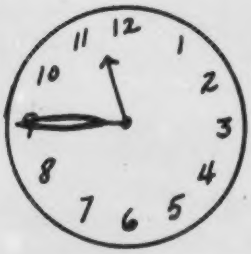
A. 1

B. 2

C. 3

D. 4

24.



A. 9:00 o'clock

B. 12:00 0'clock

C. 11:45 o'clock

D. 10:30 o'clock

25.

60 + 12

A. 6012

B. 6120

C. 126

D. 72

26.

8 + ☐ = 10

A. 1

B. 2

C. 3

D. 4

27.

9 + 6 = ☐

A. 15

B. 16

C. 17

D. 18

28. $\boxed{} + 6 = 11$

A. 3

B. 4

C. 5

D. 6

29. $\boxed{} - 8 = 8$

A. 16

B. 17

C. 18

D. 19

30. $17 - \boxed{} = 8$

A. 7

B. 9

C. 4

D. 5

31. $12 - 8 = \boxed{}$

A. 7

B. 6

C. 5

D. 4

32.

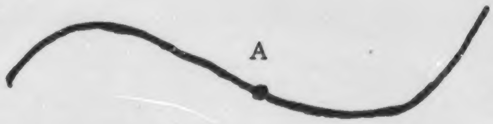
A. If 3 + 4 = 7 then
4 + 3 = 7

B. If 7 - 4 = 3 then
7 - 3 = 4

C. If 7 - 3 = 4 then
3 - 7 = 4

D. If 2 + 5 = 7 then
5 + 2 = 7

33.



Point A

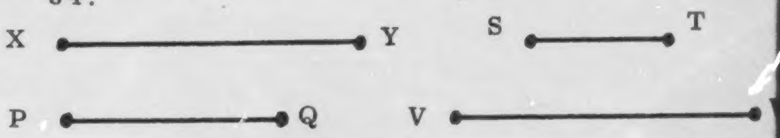
A. stands for a line.

B. stands for a line segment.

C. stands for an angle.

D. stands for a place
on the line.

34.



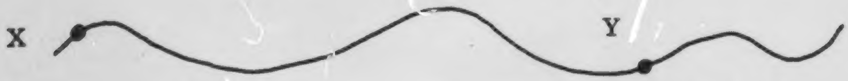
A. PQ and XY

B. PQ and ST

C. ST and VW

D. XY and VW

35.



This figure is

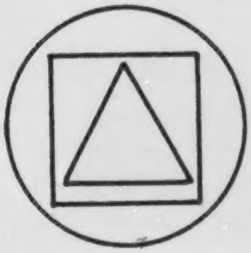
A. a simple curve.

B. a line segment.

C. a simple closed curve.

D. a polygon.

36.



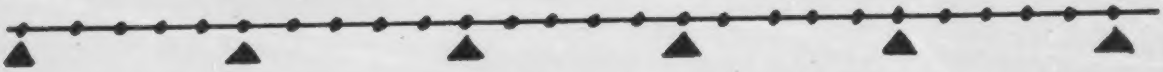
A. The square is outside the circle.

B. The circle is outside the triangle.

C. The triangle is outside the square.

D. The triangle is outside the circle.

37.



This number line shows counting by

A. 10's

B. 6's

C. 2's

D. 5's

Mathematics Test
for
Behavioral Objectives
Second Grade - Part II

38.

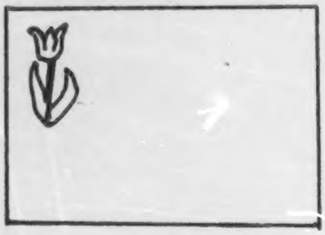
A. 80070

B. 8070

C. 870

D. 807

39.



40.

100	200	300			

41.

5 - 4, 3 - 2, 4 - 3...

A. 2 - 2

B. 2 - 1

C. 4 - 2

D. 5 - 1

42.

208, ______, 210

A. 207

B. 211

C. 206

D. 209

43.

______, 89, ______

A. 86 and 90

B. 86 and 91

C. 88 and 91

D. 88 and 90

44.

62 ○ 52

A. =

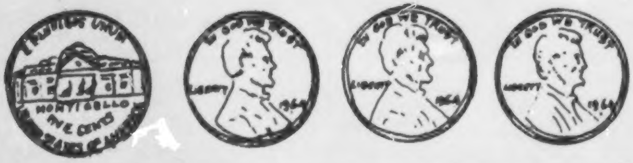
B. <

C. X

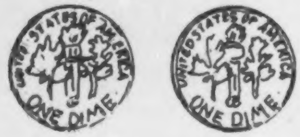
D. >

45.

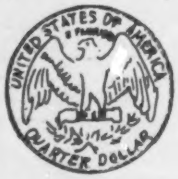
Jose had 25¢. He bought 17¢ worth of candy. His change was:



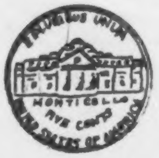
A.



B.



C.



D.

46.

Mary finds she can serve 3 of her friends from a pint of ice cream. How many can she serve from a quart of ice cream?

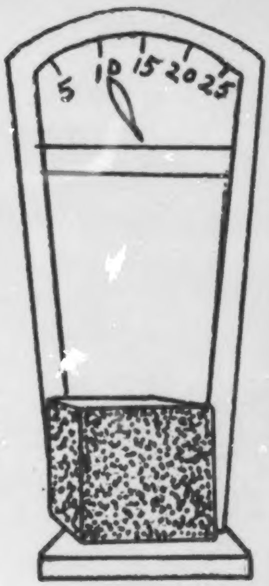
A. 5

B. 4

C. 7

D. 6

47.



A. 10 pounds

B. 24 pounds

C. 1 pound

D. 5 pounds

48.

4 + 9 = ☐

A. 10

B. 11

C. 12

D. 13

49.

7 + ☐ = 15

A. 7

B. 8

C. 9

D. 10

50.

$\boxed{} + 9 = 12$

A. 3

B. 4

C. 5

D. 6

51.

$13 - \boxed{} = 6$

A. 5

B. 6

C. 7

D. 8

52.

$\boxed{} - 8 = 0$

A. 1

B. 8

C. 0

D. 7

53.

$18 - 9 = \boxed{}$

A. 6

B. 7

C. 8

D. 9

54.

$3 + (4 + 5) = (3 + 4) + \boxed{}$

A. 7

B. 3

C. 4

D. 5

55.

$6 \boxed{} 3 < 5$

A. +

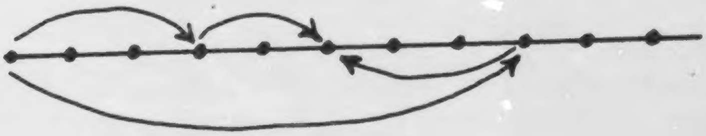
B. -

C. <

D. X

56.

$3 + 2 = 8 - \boxed{}$



A. 2

B. 3

C. 4

D. 5

57.

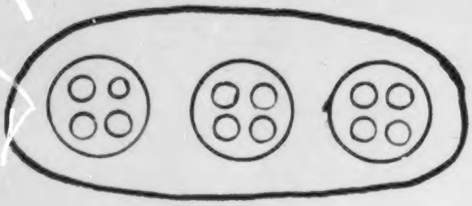
A. $8 + 0 = 9$

B. $8 + 0 = 8$

C. $8 + 0 = 0$

D. $0 + 8 = 0$

58.



A. Subtraction

B. Division

C. Multiplication

59.

8 X 1 = □

A. 81

B. 7

C. 8

D. 9

60.

3 X □ = 18

A. 9

B. 16

C. 6

D. 3

61.

A. 50 + 9

B. 5 + 9

C. 5 + 90

D. 90 + 5

62.

4 + □ = 10

A.
XX 00
XX 00

B.
XX 00
XX 00
XX 00

C.
XX 00
XX 00
00

D.
XX ✓✓ 0 0
XX ✓ 0

63.

3 + 2 ○ 2 + 3

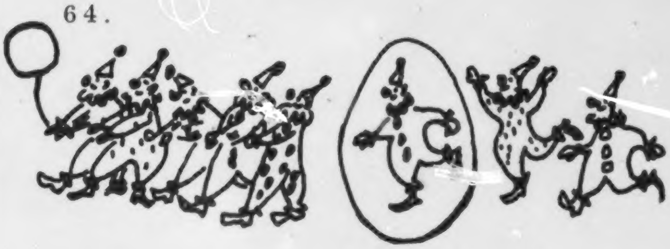
A. =

B. <

C. X

D. >

64.



A. third

B. tenth

C. seventh

D. sixth

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4		5	6	7	8	9	10	11	12	13
5	5		7	8	9	10	11	12	13	14
6	6	7		9	10	11	12	13	14	15
7	7	8	9		11	12	13	14	15	16
8	8	9	10	11		13	14	15	16	17
9	9	10	11	12	13		15	16	17	18

The pattern formed is:

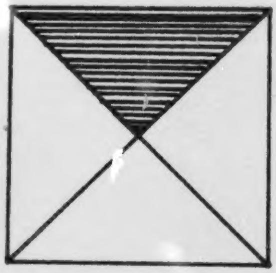
A. 5, 7, 9, 11, 13, 15.

B. 3, 6, 9, 12, 15, 18.

C. 4, 6, 8, 10, 12, 14.

D. 3, 4, 5, 6, 7, 8.

66.



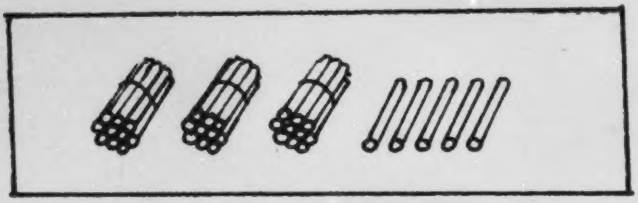
A. one half of the square.

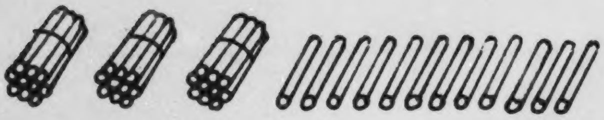
B. one third of the square.

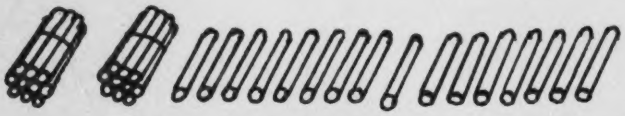
C. three thirds of the square.

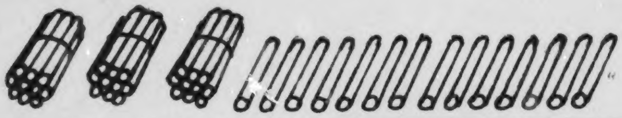
D. one fourth of the square.

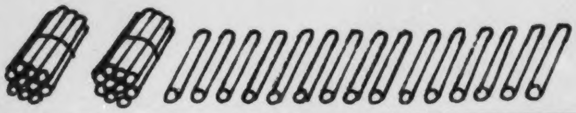
67.



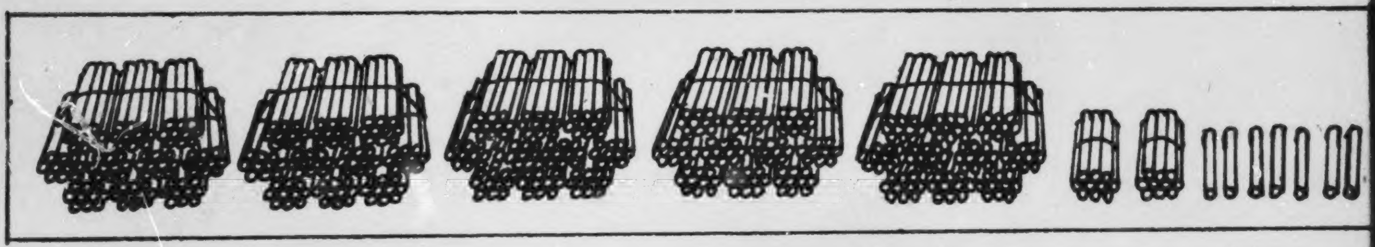
A. 

B. 

C. 

D. 

68.



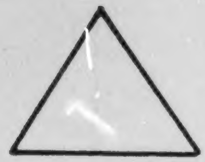
A. 752

B. 527

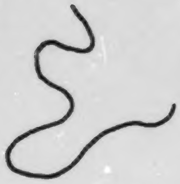
C. 725

D. 257

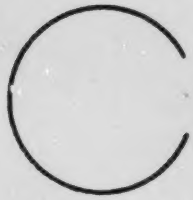
69.



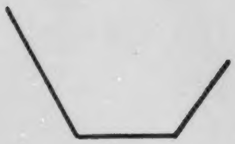
A.



B.

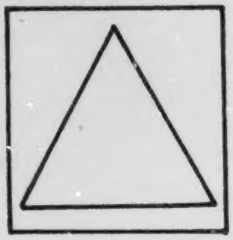


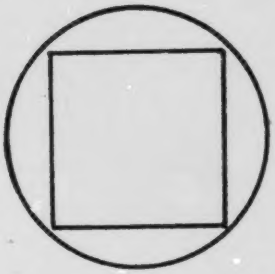
C.

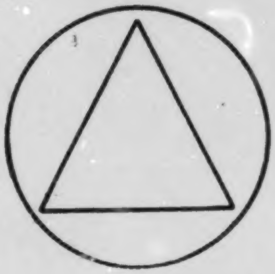


D.

70.







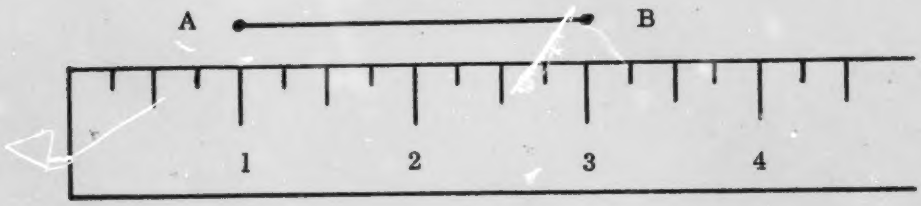
A. The circle is inside the square.

B. The square is inside the triangle.

C. The square is inside the circle.

D. The circle is inside the triangle.

71.



Line segment AB above is

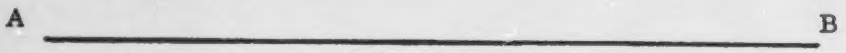
A. 4 1/2 inches long.

B. 4 inches long.

C. 3 inches long.

D. 2 inches long.

72.



This line segment

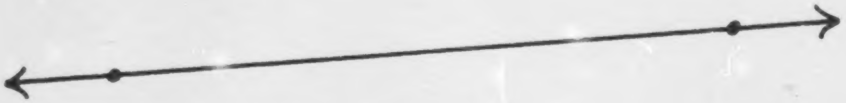
A. has no points.

B. is a set of many points.

C. is a set of 2 points.

D. is a set of 400 points.

73.



This straight line

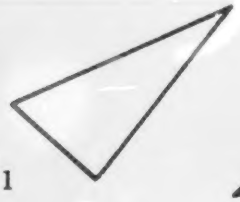
A. is a set of points which stops where the drawing of the line ends.

B. is a set of points which stops at the end of this paper.

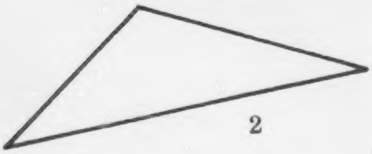
C. has end points.

D. is a set of points which never ends.

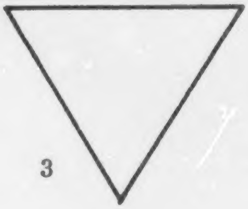
74.



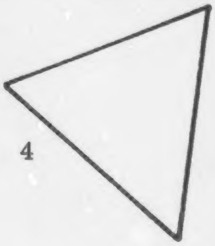
1



2



3



4

A. 2 and 1

B. 2 and 3

C. 3 and 4

D. 4 and 1

SECOND GRADE
ANSWER KEY

1. B
2. D
3. 760
4. 30, 35, 40
5. B
6. A
7. C
8. C
9. A
10. A
11. A
12. B
13. A
14. C
15. B
16. B
17. B
18. A
19. D
20. D
21. C
22. B
23. C
24. C
25. D
26. B
27. A
28. C
29. A
30. B
31. D
32. C
33. D
34. D
35. A
36. B
37. D
38. C
39. 999
40. 400, 500, 600
41. B
42. D
43. D
44. D
45. A
46. D
47. A
48. D
49. B
50. A
51. C
52. B
53. D
54. D
55. B
56. B
57. B
58. C
59. C
60. C
61. A
62. C
63. A
64. D
65. C
66. D
67. D
68. B
69. A
70. C
71. D
72. B
73. D
74. C

THIRD GRADE

ADMINISTERING INFORMATION

The following instructions to the test administrator assumes the use of machine scorable answer sheets.

The first page of the student booklet introduces him to the answer sheet. Please read this aloud to the class after they have their booklets before them and can follow along. All questions regarding the test format may be answered at this point.

Ball-point or ink will not register on the scoring machine, nor will "X" marks. The child may use a separate sheet for figuring, but should make no random marks on the answer sheet or in the test booklet. The tests are not timed, but the children should be encouraged to work at a steady pace. You may wish to divide the testing session into two parts. This is permissable so long as the booklets and answer sheets are kept secure during the interim.

If the child lacks vocabulary, he may use his text or a dictionary to assist himself, but you should not supply definitions. Frequently, the tests will cover items of learning not a part of your curriculum or in a different format. When this occurs the child should exercise his best logic and intuition to arrive at an answer, but should answer every item on the test.

Items in the test should not be directly discussed before, during or after the test to avoid invalidating this or future tests.

DO NOT OPEN THE TEST BOOKLET UNTIL YOUR TEACHER TELLS YOU TO

This is an arithmetic test. Read each question or problem carefully. Look at the lettered responses. When you have decided which is the correct answer, blacken in the space between the lines on the answer sheet under the letter of that choice. If you change your mind, erase your first answer completely. Look at the example below.

1. 12 - 5 =
   A. 12
   B. 5
   C. 7
   D. 0

	A.	B.	C.	D.	E.
1.	___	___	■	___	___

Since 7 is the correct answer, the space under the C in the answer space is blackened.

When your teacher tells you to, open your booklet and begin.

MATHEMATICS TEST
THIRD GRADE

1. Nine thousand forty may be written as

A. 9400

B. 9004

C. 9040

D. 904

2. 3 + 9 = ________

A. 6 x 2

B. 15 - 10

C. 4 + 6

D. 12 - 4

3. What number times 3 = 3?

A. 3

B. 2

C. 1

D. 0

4. Which digit is in the tens place in 1756?

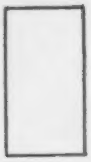
A. 1

B. 7

C. 5

D. 6

5. Which figure appears similar to figure F?



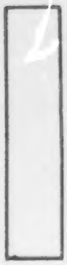
F.

A. 1

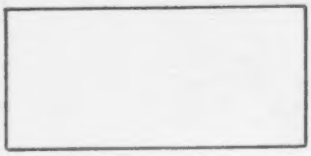
B. 2

C. 3

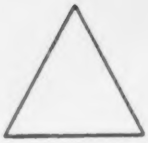
D. 4



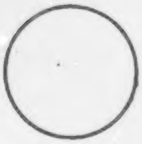
1.



2.



3.



4.

6. $\boxed{} \times 7 = 14$

The missing numeral is:

A. 1

B. 2

C. 3

D. 4

7. If we show that 3 pencils cost 25 cents by $\frac{3\text{ (pencils)}}{25\text{ cents}}$

how do we show what 9 pencils will cost?

A. $\frac{50\text{ cents}}{9\text{ pencils}}$

B. $\frac{9\text{ pencils}}{31\text{ cents}}$

C. $\frac{9\text{ pencils}}{75\text{ cents}}$

D. $\frac{31\text{ cents}}{9\text{ pencils}}$

8. Find the numeral for six thousand seventy.

A. 6070

B. 670

C. 60070

D. 6700

9. Hundreds $\boxed{111}$ Tens $\boxed{111}$ Ones $\boxed{\cancel{1111}\ 11}$

337 = 3 hundreds + _____ tens + ones.

What should be in the tens place?

A. $\boxed{1111}$ 4 tens

B. $\boxed{111}$ 3 tens

C. $\boxed{\cancel{1111}\ \cancel{1111}\ 111}$ 13 tens

D. $\boxed{\cancel{1111}\ \cancel{1111}\ 11}$ 12 tens

10. 350 is greater than which number?

A. 345

B. 350

C. 450

D. 360

11. If Ellen had 9 pages of paper dolls with 4 dolls on each page, how many dolls did she have?

A. 36

B. 37

C. 18

D. 13

12. How many lines can be drawn through the point shown by the dot below?

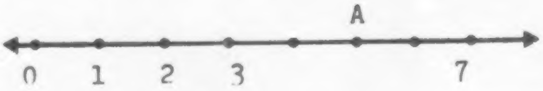
A. 1

B. 2

C. 3

D. Many

13. The numeral for point A below can be



A. 4

B. 5

C. 6

D. 7

14. $500 + 180 + 3 = 600 +$ _____ $+ 3$. What numeral is missing?

A. 50

B. 80

C. 90

D. 170

15. The Roman Numeral for seven is

A. IVI

B. IIV

C. VII

D. IIIIIII

16. $169 < \square$. What number makes the sentence true?

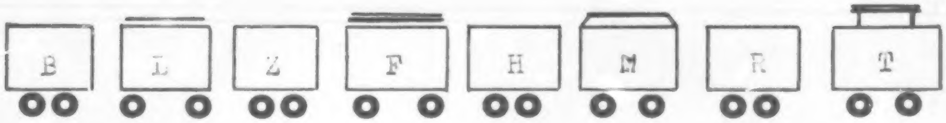
A. 157

B. 160

C. 168

D. 170

17.



If car B is the fifteenth car in a freight train and car L is the sixteenth, which car is twentieth?

A. car Z

B. car T

C. car H

D. car M

18. (4 x 3) x 2 is also equal to:

A. 4 + (3 + 2)

B. (4 x 3) x 3

C. 3 + (2 +4)

D. 4 x (3 x 2)

19. Jane can buy 3 pencils for 10¢ at the store. Another way to write "3 for 10¢" is:

A. 3 x 10

B. $\frac{3}{10}$

C. 10 + 10 + 10

D. $\frac{1}{30}$

20. Jane bought a doll hat for 39¢. She gave the clerk a dollar. The clerk gave her the hat and what change?

A. 1¢ 1¢ 1¢ 1¢ 10¢ 25¢

B. 25¢ 10¢ 10¢ 10¢ 10¢ 1¢

C. 25¢ 10¢ 1¢

D. 25¢ 25¢ 10¢ 1¢

21. 3672 can be written as:

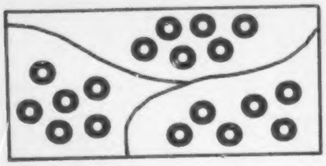
A. 300 + 600 + 70 + 2

B. 30 + 60 + 7 + 2

C. 3000 + 600 + 7 + 2

D. 3000 + 600 + 70 + 2

22.



This drawing shows:

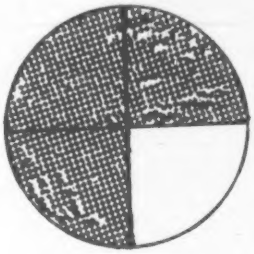
A. 3 x 6 = 18 and 18 ÷ 6 = 3

B. 2 x 9 = 18 and 18 ÷ 6 = 3

C. 10 x 8 = 18 and 18 ÷ 8 = 10

D. 6 x 3 = 18 and 18 ÷ 9 = 2

23. How much of the whole picture is shaded?



A. $\frac{3}{5}$

B. $\frac{2}{3}$

C. $\frac{3}{4}$

D. $\frac{1}{3}$

24. What goes in the box to make the statement true?

$$1627 + (240 + 467) = (1627 + \boxed{}) + 467$$

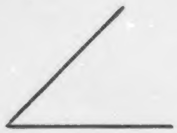
A. 200

B. 240

C. 467

D. 1627

25.



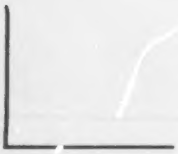
If the angle above can be moved, it will fit on top of:

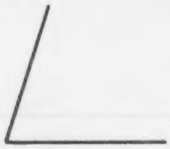
A. Angle A

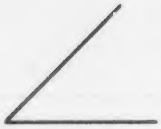
B. Angle B

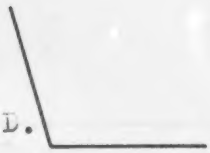
C. Angle C

D. Angle D

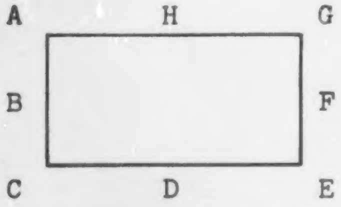
A.


B.


C.


D.


26. The rectangle below can be folded into 2 congruent parts by folding from:



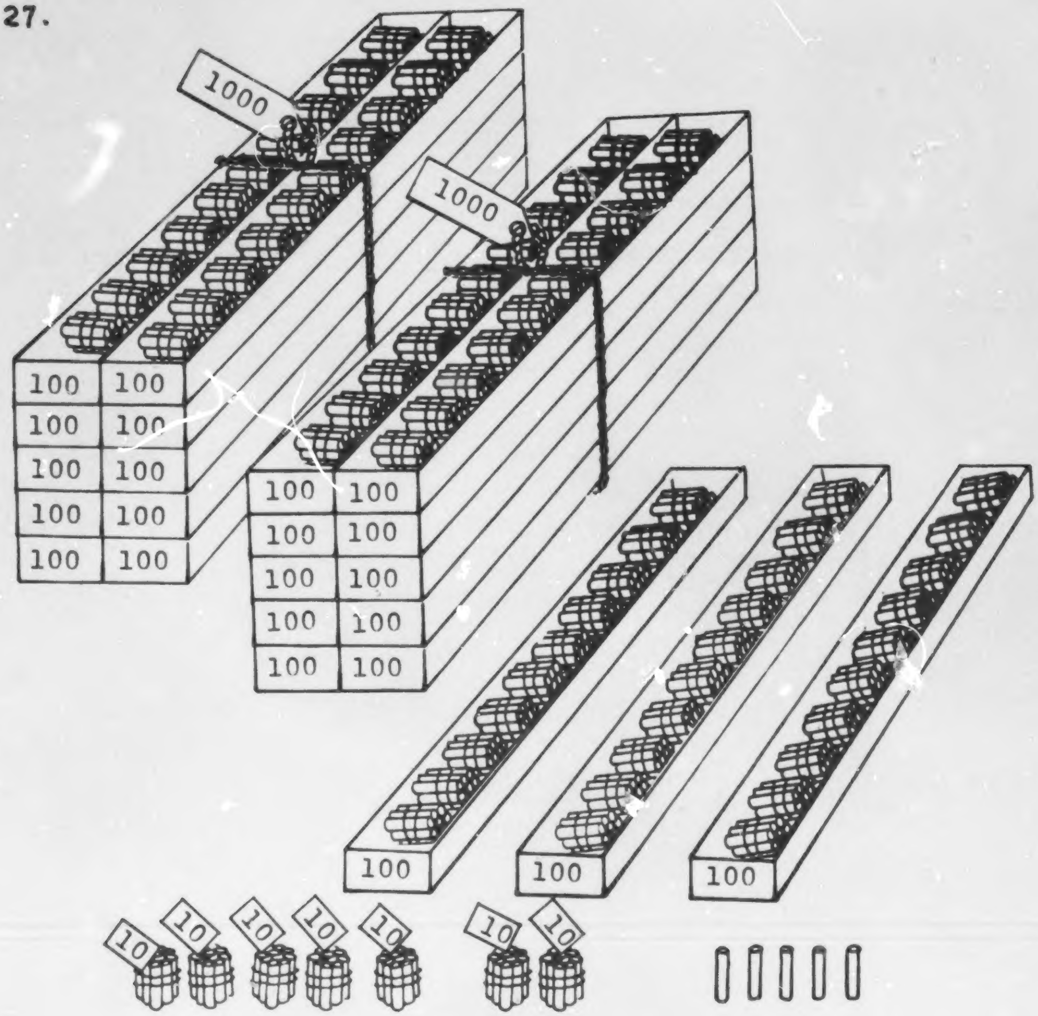
A. Point B to Point G

B. Point A to point E.

C. Point C to point F.

D. Point H to point E.

27.


1000
1000
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
100
10
10
10
10
10
10
10

Look at the set of sticks above, what is the total number of sticks in this set?

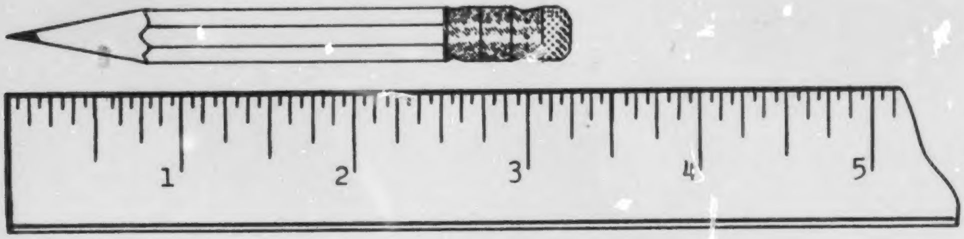
A. 2,735

B. 2,573

C. 2,375

D. 2,752

28. Which of the following is the measure of the pencil?



A. $3\frac{1}{8}$

B. $3\frac{3}{4}$

C. $3\frac{1}{2}$

D. $3\frac{1}{4}$

29. If $4 \times (5 + 2) = (4 \times 5) + (4 \times n)$, then $n =$ _____.

A. 8

B. 5

C. 2

D. 1

30. $37 \times 100 = ?$

A. 37

B. 370

C. 3700

D. 37000

31. $5 \times 4 = n$

A story to fit this sentence would be:

A. Five boys had 4 pennies each. How many pennies in all did the boys have?

B. Jack had some pennies. Jim had 5 times as many. How many did Jim have?

C. Jane had 5 books and Mary had 4. How many books did the two girls have?

D. Four boys had 20 golf balls each. How many golf balls did they have in all?

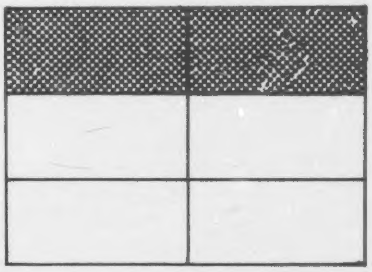
32. Look at the picture at the right. What is shown by this picture?

A. $\frac{2}{3} = \frac{1}{2}$

B. $\frac{2}{6} = \frac{1}{3}$

C. $\frac{4}{6} = \frac{1}{2}$

D. $\frac{2}{6} = \frac{1}{4}$



33. 608 + 297 is closest to

A. 600 + 200

B. 600 + 300

C. 700 + 300

D. 950 + 500

34.

cups		pints		quarts
2	=	1	=	
4	=	2	=	1
8	=	4	=	2
12	=	6	=	3

From the information above, figure how many cups would equal 5 pints.

A. 9

B. 10

C. 11

D. 13

35. What is the missing numeral?

5 thousand, 17 hundreds, 2 tens, 4 ones =

______thousands, 7 hundreds, 3 tens, 4 ones.

A. 6

B. 5

C. 7

D. 4

36. What are the missing numerals in the multiplication table to the right?

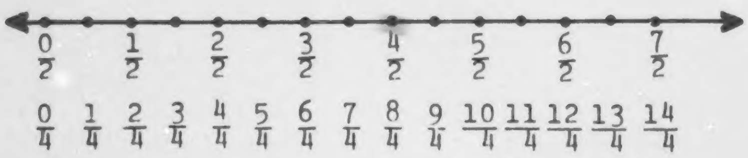
A. 11, 9, 7

B. 16, 15, 12

C. 15, 12, 7

D. 16, 12, 9

X	0	1	2	3	4	5	6	7
0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	▨
2	0	2	4	6	8	10	▨	14
3	0	3	6	9	12	▨	18	21
4	0	4	8	12	16	20	24	28
5	0	5	10	15	20	25	30	35
6	0	6	12	18	24	30	36	42
7	0	7	14	21	28	35	42	49

37. 
0/2
1/2
2/2
3/2
4/2
5/2
6/2
7/2
0/4
1/4
2/4
3/4
4/4
5/4
6/4
7/4
8/4
9/4
10/4
11/4
12/4
13/4
14/4

On this number line, the numeral 2 could name the same point as:

A. $\frac{3}{4}$

B. $\frac{4}{4}$ or $\frac{2}{2}$

C. $\frac{3}{2}$ or $\frac{6}{4}$

D. $\frac{8}{4}$ or $\frac{4}{2}$

38. Which of the following goes into the box to make the statement true?

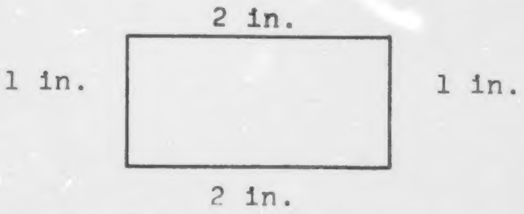
$36 + 27 \boxed{} 97 - 28$

A. <

B. >

C. =

39. The perimeter of the rectangle below is:

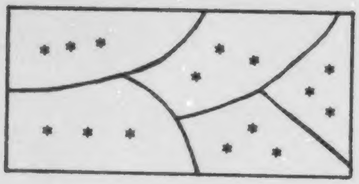

2 in.
1 in.
1 in.
2 in.

A. 2 square inches

B. 8 inches

C. 4 inches

D. 6 inches

40. 

This shows:

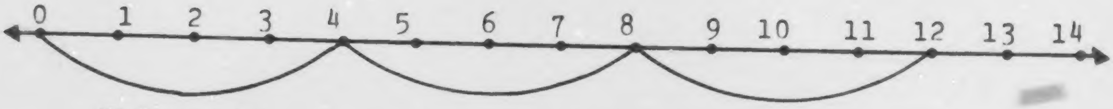
A. 6 ÷ 3 = n

B. 15 ÷ 3 = n

C. 5 ÷ 3 = n

D. 9 ÷ 3 = n

41.


0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

This number line picture shows:

A. 3 x 4 = 12

B. 4 + 8 = 12

C. 2 x 6 = 12

D. 4 ÷ 3 = 12

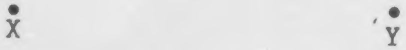
42. How many straight lines can pass through both of the points X and Y.

A. 1

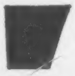
B. 2

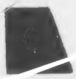
C. None

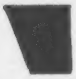
D. Many

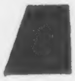


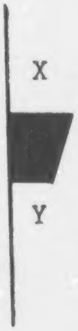
43. If the shaded figure were folded to the left over the line XY, which of the following figures would appear?

A. 

B. 

C. 

D. 



44. $\frac{1}{2}$ an apple is less than:

A. $\frac{2}{3}$ of that apple

B. $\frac{1}{4}$ of that apple

C. $\frac{1}{6}$ of that apple

D. $\frac{2}{4}$ of that apple

45. $\begin{array}{r} 379 \\ \underline{\text{x}\ \ 3} \\ 11\square7 \end{array}$ What numeral is missing?

A. 1

B. 2

C. 3

D. 7

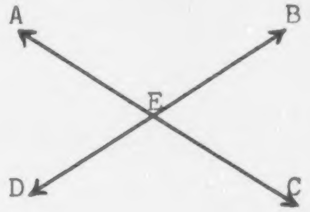
46. To do this exercise, how should the 7 tens and 2 ones be renamed?

7 tens 2 ones
- 4 tens 3 ones

A. 7 tens 12 ones
B. 6 tens 3 ones
C. 8 tens 12 ones
D. 6 tens 12 ones

47. In the figure below, which of the following sets of letters names an angle?

A. BCD
B. EBC
C. CED
D. CDA



48. Which of the figures below shows a ray?

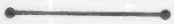


Figure 1

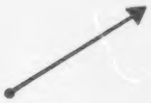


Figure 2

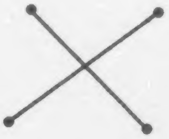


Figure 3

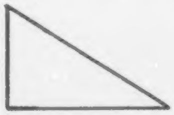


Figure 4

A. Figure 1
B. Figure 2
C. Figure 3
D. Figure 4

THIRD GRADE
ANSWER KEY

1. C
2. A
3. C
4. C
5. B
6. B
7. C
8. A
9. B
10. A
11. A
12. D
13. B
14. B
15. C
16. D
17. D
18. D
19. B
20. D
21. D
22. A
23. C
24. B
25. C
26. B
27. C
28. D
29. C
30. C
31. A
32. B
33. B
34. B
35. A
36. C
37. D
38. A
39. D
40. B
41. A
42. A
43. C
44. A
45. C
46. D
47. C
48. B

FOURTH GRADE

ADMINISTERING INFORMATION

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FOURTH GRADE

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This is an arithmetic test. Read each question or problem carefully. Look at the lettered responses. When you have decided which is the correct answer, blacken in the space between the lines on the answer sheet under the letter of that choice. If you change your mind, erase your first answer completely. Look at the example below.

1. 12 - 5 =
   A. 12
   B. 5
   C. 7
   D. 0

1. A. B. C. D. E.
   — — ■ — —

Since 7 is the correct answer, the space under the C in the answer space is blackened.

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MATHEMATICS TEST
FOURTH GRADE

1. Which of the following expresses 23?

   A. (3 + 4) x 5

   B. (3 x 4) + 5

   C. 3 + (4 x 5)

   D. 3 x (4 + 5)

2. 8 x 8 = □

   A. 63

   B. 64

   C. 72

   D. 68

3. 6 x 9 = □

   A. 63

   B. 64

   C. 54

   D. 56

4. 8 x 6 = □

   A. 45

   B. 42

   C. 56

   D. 48

5. Which sentence is true?

A. 62 seconds is greater than one minute.

B. 62 seconds is less than one minute.

C. 62 seconds equals one minute.

D. None of the above.

6. In the sentence $3 \times \square = 10$, the $\square$ is equal to:

A. 3

B. 4

C. 5

D. No whole number.

7. $\frac{1}{2}$ of a pie is the same size as:

A. $\frac{3}{8}$ of that pie

B. $\frac{2}{4}$ of that pie

C. $\frac{4}{2}$ of that pie

D. $\frac{2}{6}$ of that pie

8. In the numeral 76,951,432, the 5 has what place value?

A. hundreds'

B. hundred-thousands'

C. thousands'

D. ten-thousands'

9. Jim has 4 groups of marbles, of 5 marbles each. He then found 3 more marbles. How many marbles does Jim have in all? Find the number sentence which describes this story.

A. (4 + 5) + 3 = ☐

B. (4 x 5) + 3 = ☐

C. (5 + 3) x 4 = ☐

D. (3 x 5) + 4 = ☐

10. If 1367 + 633 = 2000, then

A. 2000 - 633 = 1367

B. 2000 + 633 = 1367

C. 1367 - 2000 = 633

D. 2000 + 1367 = 633

11. Find the solution for ☐ in the number sentence (2 x 4) + ☐ = 11.

A. 5

B. 2

C. 3

D. 4

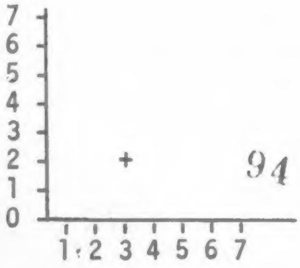
12. Consider the point in the place below. Which pair of numbers names the point?

A. (2,4)

B. (3,3)

C. (3,2)

D. (2,2)



13. In the problem $632 > \square$, $\square$ can be:

A. 622

B. 652

C. 642

D. 632

14. 24 inches =

A. 2 feet

B. 1 yard

C. $\frac{1}{2}$ rod

D. 3 feet

15. Eight pigs are in a pen. They are separated into 4 equal groups. Choose the number sentence which describes what happened.

A. $8 \times 4 = r$

B. $4 \div 8 = r$

C. $8 \div 4 = r$

D. $4 \div r = 8$

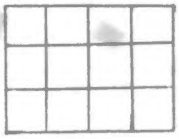
16. Find the area of this figure:

A. 14 units

B. 12 units

C. 4 units

D. 3 units



17. One hundred forty-seven thousand twenty-six written as a numeral would be:

A. 1,470,026

B. 147,260

C. 100,047,026

D. 147,026

18. 6 x ☐ = 48 is equivalent to:

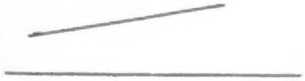
A. 48 x 6 = ☐

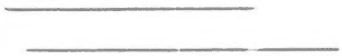
B. 48 ÷ 6 = ☐

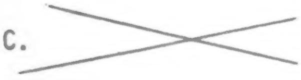
C. 48 x ☐ = 6

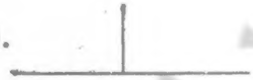
D. 48 - 6 = ☐

19. Find the example of parallel line segments:

A.


B.


C.


D.


20. What numeral belongs in the box?

A. 8

B. 7

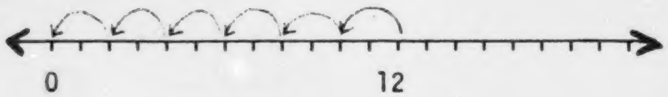
C. 6

D. 9

$$\begin{array}{r} 64,675 \\ 2,739 \\ +\ 4,368 \\ \hline 71,\square 82 \end{array}$$

96

21. This number line illustrates:



A. 12 x 2

B. 12 ÷ 2

C. 12 + 2

D. 12 x 6

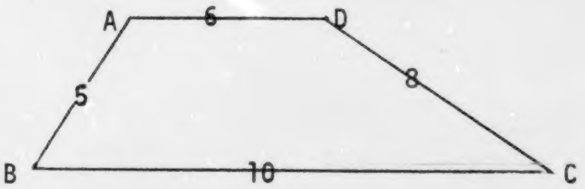
22. The perimeter of figure ABCD =

A. 29

B. 28

C. 30

D. 27



23. Identify the set of whole numbers between 1647 and 1652.

A. {1647, 1648, 1649, 1650, 1651}

B. {1647, 1648, 1649, 1650, 1651, 1652}

C. {1648, 1649, 1650, 1651, 1652}

D. {1648, 1649, 1650, 1651}

24. What numeral belongs in the box? 238 x 100 = ☐

A. 2,380

B. 23,800

C. 238,000

D. 2,380,000

25. What numeral belongs in the box?

A. 4

B. 5

C. 6

D. 9

$$\begin{array}{r} 5,023 \\ -\,2,978 \\ \hline 2,0\square 5 \end{array}$$

26. The number sentence $\frac{3}{4} = \frac{9}{12}$ is true because:

A. 3 x 4 = 9 x 12

B. 3 x 12 = 4 x 9

C. 3 x 9 = 4 x 12

D. 9 x 3 = 12 x 4

27. Identify the set of all factors of 12.

A. {1, 2, 6, 12}

B. {1, 2, 3, 4, 6, 12}

C. {2, 3, 4, 6, 12}

D. {1, 2, 3, 4, 5, 6, 12}

28. The Roman numeral that expresses 19 is:

A. IXX

B. XXI

C. XIX

D. XVIII

29. Choose the correct numerals for boxes $\boxed{x}$ and $\boxed{y}$ in the following problem:

$$\begin{array}{r} 2\;3 \\ \times\;6\;8 \\ \hline 1\;\boxed{x}\;4 \\ 1\;3\;8\; \\ \hline 1\;5\;\boxed{y}\;4 \end{array}$$

A. $x = 8;\ y = 5$

B. $x = 6;\ y = 4$

C. $x = 8;\ y = 6$

D. $x = 7;\ y = 5$

30. Find the missing whole number: $\frac{2}{3} = \frac{\square}{9}$

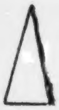
A. 3

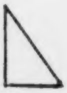
B. 4

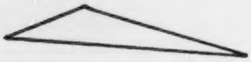
C. 5

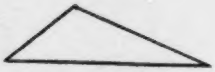
D. 6

31. Which of the following is an isosceles triangle?

A. 

B. 

C. 

D. 

32. Estimate the product of these two numbers: 31 x 48 = _____

A. 1200

B. 15,000

C. 12,000

D. 1500

33. In the sentence ☐ x 23 = 23 x ☐, the ☐ is equal to:

A. 1 only

B. 2 only

C. 5 only

D. Any number

34. In the sentence 5 x 13 = (☐ x 10) + (☐ x 3), the ☐ is equal to:

A. 5

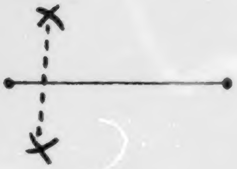
B. 13

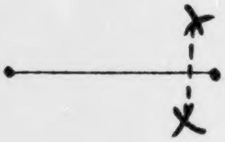
C. 3

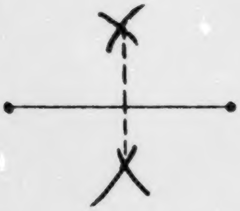
D. 10

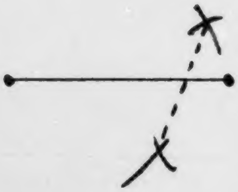
35. Construction:

Which of the following demonstrates bisecting a line segment using a compass and straight edge?

A. 

B. 

C. 

D. 

36. Identify the set of common factors of 8 and 12.

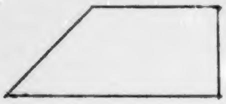
A. {2, 4, 8}

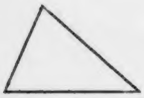
B. {2, 3, 4}

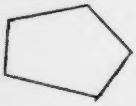
C. {1, 2, 4}

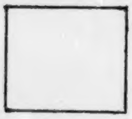
D. {1, 4, 8}

40. Which of the following is a parellelogram?

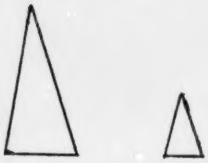
A. 

B. 

C. 

D. 

41. These two triangles seem to be:



A. congruent only

B. similar only

C. equal

D. similar & congruent

42. Which of the following can we use to find the number of feet in four yards?

A. $\frac{1}{3} = \frac{4}{\square}$

B. $\frac{1}{3} = \frac{\square}{4}$

C. $\frac{3}{1} = \frac{4}{\square}$

D. $\frac{1}{2} = \frac{4}{\square}$

43. Choose the correct solution to this problem:

A.
$$\begin{array}{r r l} 32 & \overline{)\,489} & \\ & \underline{320} & 10 \times 32 \\ & 169 & \\ & \underline{128} & 5 \times 32 \\ & 41 & \end{array}$$

B.
$$\begin{array}{r r l} 32 & \overline{)\,489} & \\ & \underline{320} & 20 \times 32 \\ & 169 & \\ & \underline{160} & 5 \times 32 \\ & 9 & \end{array}$$

C.
$$\begin{array}{r r l} 32 & \overline{)\,489} & \\ & \underline{320} & 10 \times 32 \\ & 169 & \\ & \underline{160} & 5 \times 32 \\ & 9 & \end{array}$$

D.
$$\begin{array}{r r l} 32 & \overline{)\,489} & \\ & \underline{320} & 100 \times 32 \\ & 169 & \\ & \underline{160} & 50 \times 32 \\ & 9 & \end{array}$$

44. A sheet of paper is a model of:

A. a point

B. a line

C. a plane

D. space

45. Estimate the answer for: $798 \div 22 =$ _____

A. 44

B. 40

C. 400

D. 30

46. $n \div 1 = \square$. When n does not equal 0 or 1, $\square$ is equal to:

A. 1

B. n

C. 0

D. $\frac{1}{n}$

47. Which figure or figures have two or more axes of symmetry?

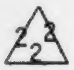


Figure A

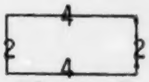


Figure B

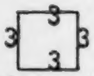


Figure C

A. A and B

B. A and C

C. B and C

D. A, B, and C

48. The set of points where two planes intersect represents:

A. a point

B. a line

C. a plane

D. space

49. The set of points in a plane that are all the same distance from one point is called:

A. a square

B. a line

C. a triangle

D. a circle

37. In the sentence, ___ x ___ = 30,

A. All of the answers given are correct.

B. ___ = 3, ___ = 10

C. ___ = 5, ___ = 6

D. ___ = 10, ___ = 3

38. Choose the problem that is best represented by the following number sentence: ___ x 3 = 12.

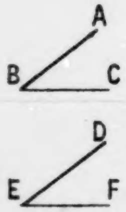
A. Jane had some jacks. Mary gave her three more jacks. She now has 12 jacks. How many jacks did Jane have to begin with?

B. There are 12 marbles in all. There are 3 marbles in each group. How many groups of marbles are there?

C. Bill sold 3 times as many tickets as Bob. Bob sold 12 tickets. How many tickets did Bill sell?

D. The children bought 12 different things at the dime store. The clerk put 3 things into one bag. If she put the rest into a different bag, how many did she put in this bag?

39. These angles seem to be:



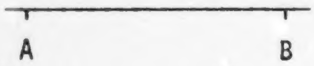
A. perpendicular

B. congruent

C. obtuse

D. vertical

50. Look at the line segment $\overline{AB}$. Which statement is true?



A. There is one point between point A and point B

B. There are 3 points between point A and point B

C. There are no points between point A and point B.

D. There are many points between point A and point B.

51. The set of all points is:

A. a point

B. a line

C. a plane

D. space

FOURTH GRADE
ANSWER KEY

1. C
2. B
3. C
4. D
5. A
6. D
7. B
8. D
9. B
10. A
11. C
12. C
13. A
14. A
15. C
16. B
17. D
18. B
19. B
20. B
21. B
22. A
23. D
24. B
25. A
26. B
27. B
28. C
29. C
30. D
31. A
32. D
33. D
34. A
35. C
36. C
37. A
38. B
39. B
40. D
41. B
42. A
43. C
44. C
45. B
46. B
47. D
48. B
49. D
50. D
51. D

FIFTH GRADE

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1. 12 - 5 =

A. 12
B. 5
C. 7
D. 0

1.	A.	B.	C.	D.	E.
			■		

Since 7 is the correct answer, the space under the C in the answer space is blackened.

When your teacher tells you to, open your booklet and begin.

MATHEMATICS TEST
FIFTH GRADE

1. $24 \div 5 =$ ___?___

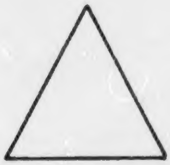
   A. $4\frac{2}{5}$

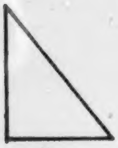
   B. $4\frac{4}{5}$

   C. $5\frac{2}{5}$

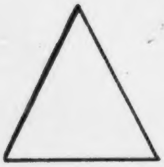
   D. $5\frac{4}{5}$

2. The triangle at the right appears to be congruent with which triangle below:

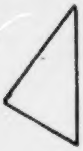




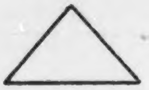
A.



B.

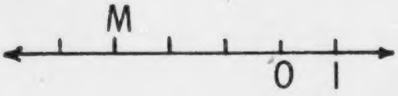


C.



D.

3. On the number line to the right, point M represents:



   A. -4

   B. -3

   C. -1

   D. 3

4. Let $\frac{A}{B}$ be any fraction, then $\frac{A}{B} + 0 =$ ___?___

   A. $\frac{B}{A}$

   B. $\frac{A}{B}$

   C. 0

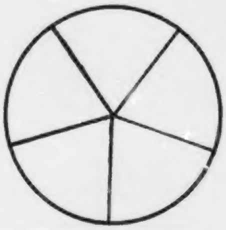
5. The picture at the right represents a pie. If three people are each served one piece from the pie, which sentence illustrates the situation?

A. $1 \div 3 = \frac{1}{3}$

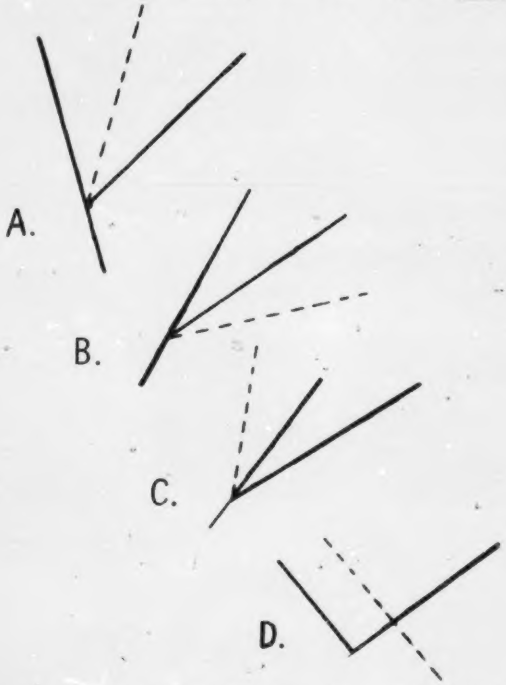
B. $\frac{5}{5} - \frac{3}{5} = \frac{2}{5}$

C. $\frac{5}{5} - \frac{2}{5} = \frac{3}{5}$

D. $\frac{2}{5} + \frac{3}{5} = \frac{5}{5}$



6. Which of the following demonstrates bisecting an angle?



7. Which one of the following fractions belong to this set of equivalent fractions? $\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{5}{10}$

A. $\frac{4}{6}$

B. $\frac{4}{8}$

C. $\frac{4}{12}$

D. $\frac{4}{16}$

8. How do the fractions $\frac{3}{8}$ and $\frac{3}{4}$ compare?

A. $\frac{3}{8} = \frac{3}{4}$

B. $\frac{3}{8} < \frac{3}{4}$

C. $\frac{3}{8} > \frac{3}{4}$

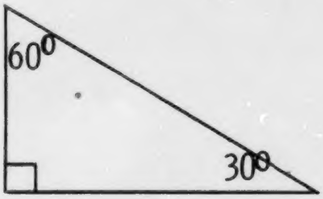
9. A right triangle is pictured below; a right angle contains:

A. 30°

B. 60°

C. 90°

D. 180°



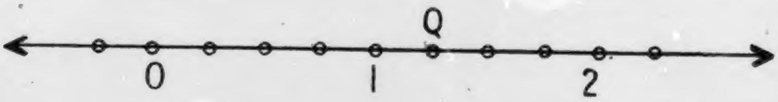
10. Point Q represents what number?

A. $\frac{3}{4}$

B. $\frac{4}{4}$

C. $\frac{5}{4}$

D. $\frac{7}{4}$



11. The instrument which permits exact measurements is:

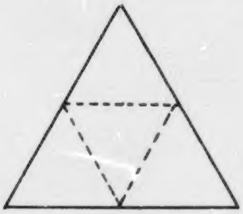
A. Ruler.

B. Cloth tape.

C. Metal tape, because it does not stretch.

D. None of the above, because no measuring instrument is exact.

12. If the figure at the right were folded on the dashed lines and the edges taped, it would form a:



A. Dodecahedron

B. Cube

C. Pyramid

D. Trapezoid

13. Which is true?

A. $\frac{4}{2} + \frac{1}{4} = \frac{5}{6}$

B. $\frac{2}{4} + \frac{1}{4} = \frac{1}{4} + \frac{2}{4}$

C. $\frac{1}{4} + \frac{4}{2} = \frac{3}{4}$

D. $\frac{4}{2} + \frac{4}{1} = \frac{8}{2}$

14. Which of the following lists of numbers contain only prime numbers?

A. 3, 5, 7, 9

B. 13, 17, 19, 23

C. 11, 13, 15, 19

D. 10, 20, 30, 40

15. Select the correct numeral for boxes $\boxed{x}$ and $\boxed{y}$ in the following problem.

A. x = 2, y = 4

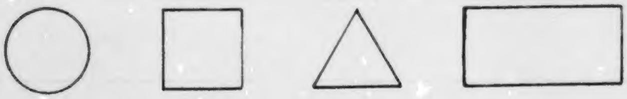
B. x = 1, y = 3

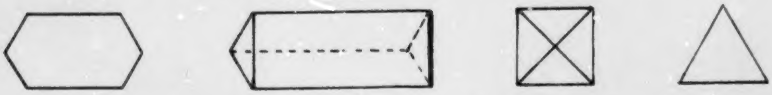
C. x = 2, y = 3

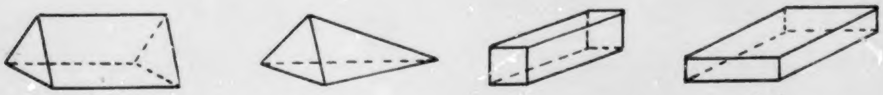
D. x = 3, y = 4

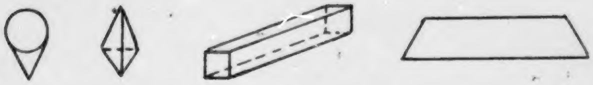
$$\begin{array}{ccccccc}
 & & & 4 & 2 & 8 & 9 \\
 & & & \times & 3 & 7 & 5 \\
\cline{3-7}
 & & 2 & 1 & 4 & 4 & 5 \\
 & 3 & 0 & 0 & \boxed{x} & 3 & \\
1 & 2 & 8 & 6 & 7 & & \\
\hline
1 & 6 & 0 & 8 & \boxed{y} & 7 & 5
\end{array}$$

16. In which group are all four figures polyhedrons?

A. 

B. 

C. 

D. 

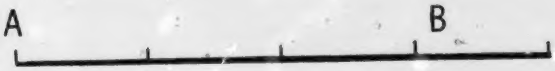
17. The measure of $\overline{AB}$ is best approximated as:

A. 2 units

B. 3 units

C. 4 units

D. 5 units



18. Select the numeral which is not a name for $\frac{3}{4}$.

A. $\frac{1}{4} + \frac{2}{4}$

B. $1 - \frac{1}{4}$

C. $\frac{9}{12}$

D. $\frac{18}{22}$

19. Which is true?

A. $\frac{1}{2} + (\frac{1}{4} + \frac{1}{3}) = (\frac{1}{2} - \frac{1}{4}) + \frac{1}{3}$

B. $(\frac{1}{3} + \frac{1}{2}) + \frac{1}{4} = (\frac{1}{4} - \frac{1}{3}) + \frac{1}{2}$

C. $(\frac{1}{2} + \frac{1}{3}) + \frac{1}{4} = \frac{1}{2} + (\frac{1}{3} + \frac{1}{4})$

D. $(\frac{1}{2} + \frac{1}{3}) + (\frac{1}{3} + \frac{1}{4}) = \frac{1}{2} (\frac{1}{3} + \frac{1}{4})$

20. Select the least common multiple of 15 and 25:

A. 45

B. 75

C. 125

D. 375

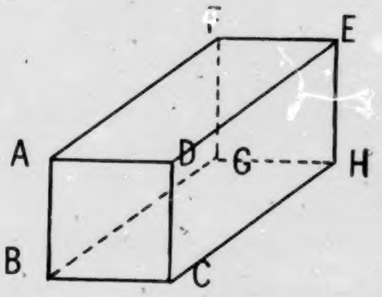
21. In the figure shown $\overline{CH}$ is a (an)

A. edge

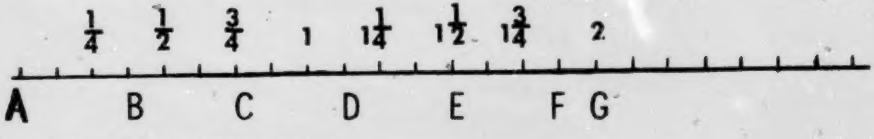
B. face

C. vertex

D. diagonal



22. Given the following number line:


$\frac{1}{4}$
$\frac{1}{2}$
$\frac{3}{4}$
1
$1\frac{1}{4}$
$1\frac{1}{2}$
$1\frac{3}{4}$
2
A
B
C
D
E
F
G

Point G on the above line represents:

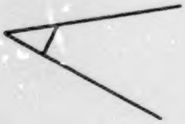
A. $\frac{1}{8}$

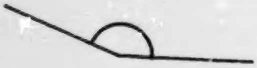
B. $\frac{2}{8}$

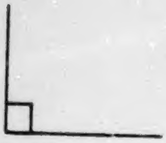
C. $\frac{3}{8}$

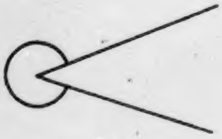
D. $\frac{8}{4}$

23. Which of the following is an example of a right angle?

A. 

B. 

C. 

D. 

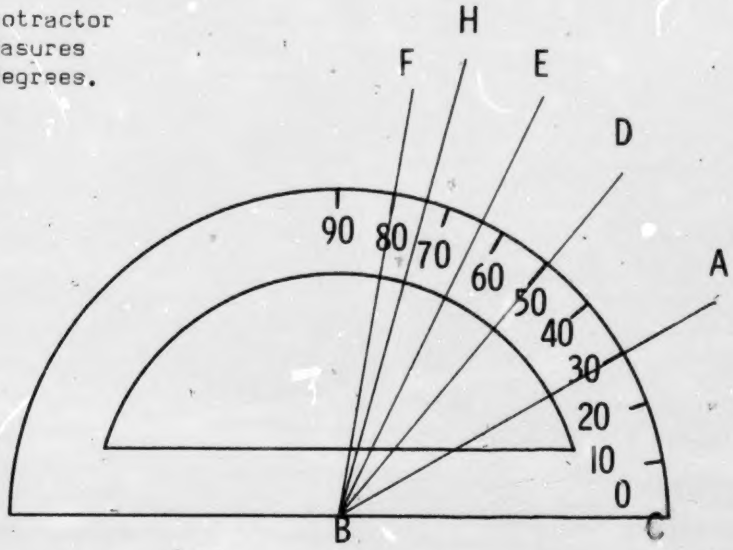
24. In the figure of the protractor to the right, ∠CBE measures approximately _______ degrees.

A. 20

B. 35

C. 65

D. 75


H
F
E
D
A
90
80
70
60
50
40
30
20
10
0
B
C

25. What is the greatest common factor of 15 and 75?

A. 25

B. 15

C. 5

D. 3

26. Which of the subtraction problems below cannot be done in the set of positive rational numbers?

A. $\frac{3}{4} - \frac{1}{8} =$

B. $\frac{1}{2} - \frac{3}{8} =$

C. $\frac{4}{5} - \frac{7}{8} =$

D. $\frac{5}{9} - \frac{1}{9} =$

27. $\frac{3}{4}$ may be expressed as:

A. $\frac{9}{12}$ and $\frac{15}{20}$

B. $\frac{6}{12}$ and $\frac{12}{24}$

C. $\frac{9}{16}$ and $\frac{27}{48}$

D. $\frac{6}{16}$ and $\frac{18}{48}$

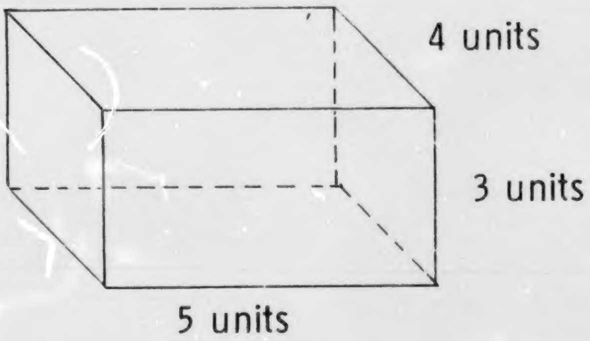
28. The volume of the rectangular solid is:

A. 80 cubic units

B. 60 cubic units

C. 24 cubic units

D. 12 cubic units



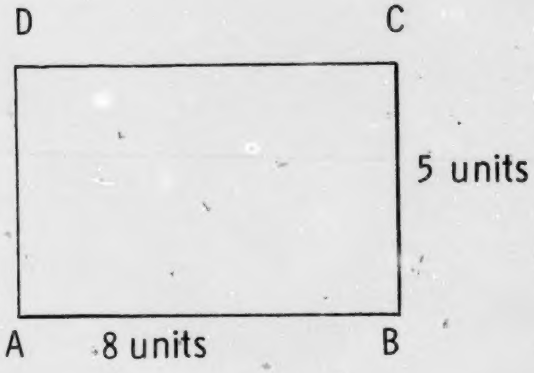
29. The area of rectangle ABCD is:

A. 13 square units

B. 20 square units

C. 26 square units

D. 40 square units



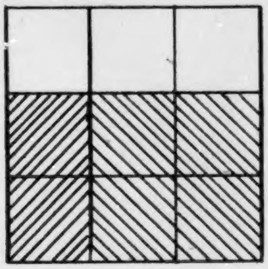
30. The number 1 is assigned to this region. Study the shaded portion and select the correct equation.

A. $\frac{2}{9} + \frac{4}{9} = \frac{6}{9}$

B. $\frac{2}{9} + \frac{4}{9} = \frac{6}{18}$

C. $\frac{3}{9} + \frac{4}{9} = \frac{7}{9}$

D. $\frac{3}{9} + \frac{4}{9} = \frac{6}{9}$



31. Choose the correct solution to this problem: $24\overline{)4862}$

A.
```
24 |4862 |
    4800 |  200x24
      62 |
      72 |____3x24
            203
```

B.
```
24 |4862 |
    7200 |  300x24
     662 |
     480 |   20x24
     182 |
     168 |____7x24
      14    327
```

C.
```
24 |4862 |
    4800 |  200x24
      62 |
      48 |____2x24
      14    202
```

D.
```
24 |4862 |
    2400 |  100x24
    2462 |
    4800 |  200x24
      62 |
      48 |____2x24
      14    302
```

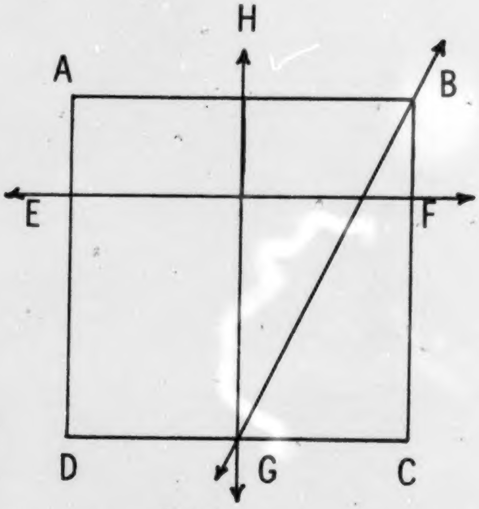
32. Locate rectangle A B C D in the figure below. Which of the following lines separates the rectangle into symmetric figures?

A. A B

B. B G

C. E F

D. G H



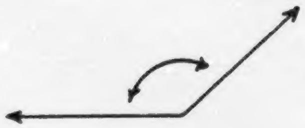
33. What type of angle is this?

A. Obtuse

B. Acute

C. Right

D. Straight



34. The smallest positive rational number is:

A. any positive number less than $\frac{1}{2}$

B. $\frac{1}{9999999}$

C. 0

D. impossible to find

35. Which of the following shows that $\frac{3}{4} > \frac{2}{5}$.

A. $\frac{6}{4} > \frac{4}{5}$

B. $\frac{15}{20} > \frac{8}{20}$

C. $\frac{6}{8} > \frac{6}{10}$

D. $\frac{3}{2} > \frac{2}{4}$

36. Select the number which is not a composite number.

A. 19

B. 21

C. 27

D. 36

120

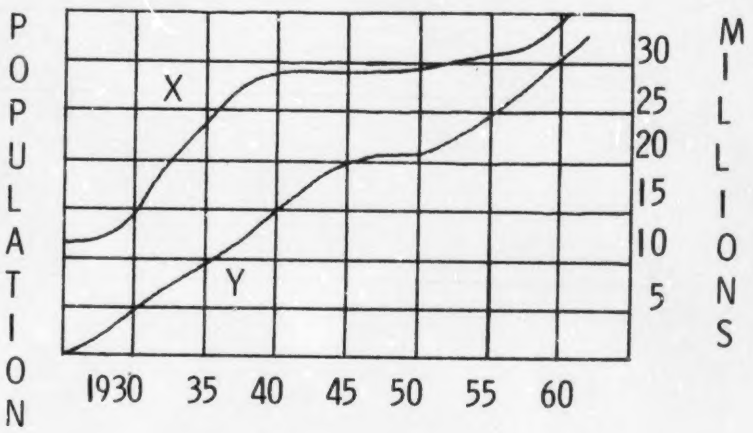
37. During which 5 year period did country X witness its greatest population growth?

A. 1935-1940

B. 1940-1945

C. 1945-1950

D. 1950-1955



38. (The graph above is used for questions 37 and 38.)

The least difference in population between the two countries occurred in:

A. 1930

B. 1940

C. 1950

D. 1960

39. Using the formula, E = V + F - 2, find the number of edges (E) in a polyhedron that has 8 verticles, (V), and 6 faces, (F).

A. 16

B. 14

C. 12

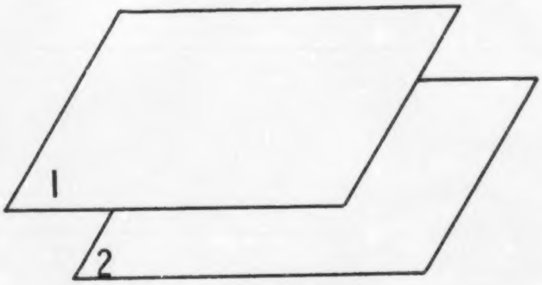
D. 10

40. In the portions at the right, plane 1 and plane 2 appear to:

A. be parallel

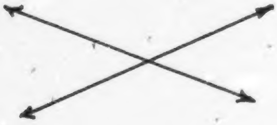
B. be perpendicular

C. intersect

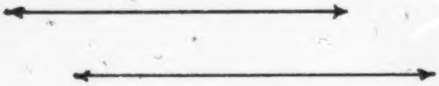


41. Look at the pairs of lines below. Which pair appears to be perpendicular?

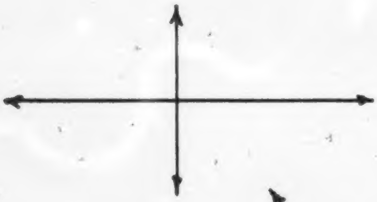
A.



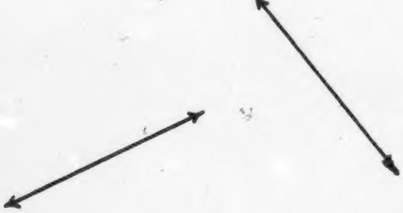
B.



C.



D.



42. The sentence $\underline{(2 \times \frac{1}{3}) + (2 \times \frac{2}{3})} = 2$ is correct. Which of the following shows the proper use of the distributive property in simplifying the sentence?

A. $(2 + 2) + (\frac{1}{3} + \frac{2}{3}) = 2$

B. $2 \times (\frac{1}{3} + \frac{2}{3}) = 2$

C. $(\frac{1}{3} \times 2) + \frac{2}{3} \times 2 = 2$

D. $2 + (\frac{1}{3} + 2) \times \frac{2}{3} = 2$

43. The sentence $\frac{1}{2} \times \square = \frac{3}{4}$ is equivalent to:

A. $\frac{3}{4} \times \frac{1}{2} = \square$

B. $\frac{1}{2} \div \frac{3}{4} = \square$

C. $\frac{1}{2} \times \frac{3}{4} = \square$

D. $\frac{3}{4} \div \frac{1}{2} = \square$

44. If $N \div \frac{3}{4} = 1$, then N equals:

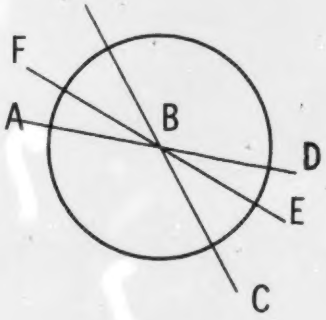
A. $\frac{1}{4}$

B. $\frac{2}{4}$

C. $\frac{3}{4}$

D. $\frac{4}{4}$

45. In the circle below, which line segment is a radius?



A. BD

B. AC

C. CD

D. EF

46. The Roman numeral that expresses the number 66 is:

A. LXVI

B. LXIV

C. XLIV

D. XLVI

47. Which of the subtraction exercises below is correct?

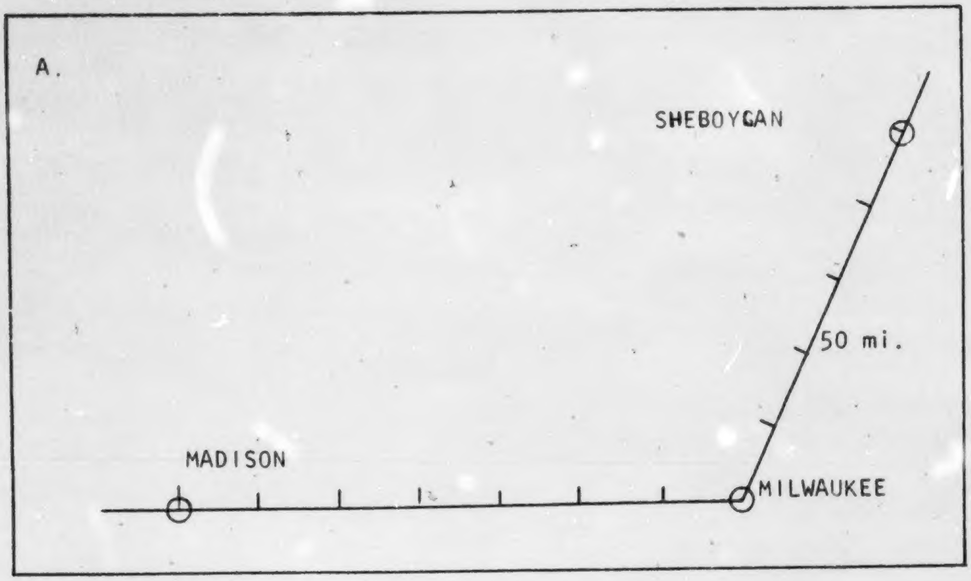
A. $\frac{5}{6} - \frac{2}{3} = \frac{3}{6}$

B. $\frac{5}{8} - \frac{1}{2} = \frac{4}{6}$

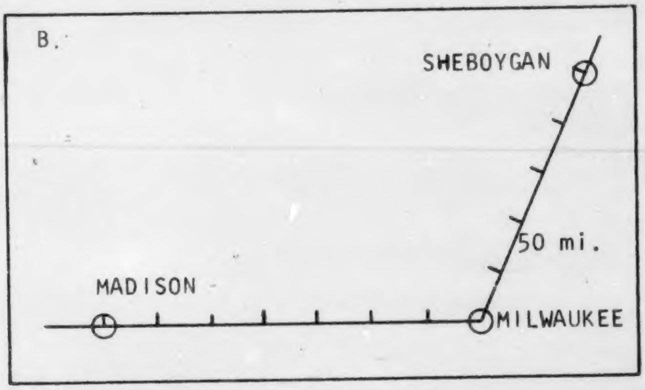
C. $\frac{7}{8} - \frac{1}{4} = \frac{5}{8}$

D. $\frac{4}{5} - \frac{7}{10} = \frac{1}{20}$

A.


SHEBOYGAN
50 mi.
MADISON
MILWAUKEE

B.


SHEBOYGAN
50 mi.
MADISON
MILWAUKEE

48. Which map shows that the distance from Madison to Milwaukee is approximately 70 miles?

A. A only

B. B only

C. Neither

D. Both

49. A plane is determined by ________ point(s) not in a straight line.

A. Zero

B. One

C. Two

D. Three

50. Select the numeral which correctly expresses eighty-nine and forty-seven thousandths.

A. 89.470

B. 89.47

C. 89.047

D. 89.0047

51. 2^3 is another name for:

A. 2000

B. 9

C. 8

D. 6

52. The prime factors of 45 are:

A. 1, 5, 45

B. 5, 9

C. 3, 5

D. 1, 3, 15

53. In the sentence $\frac{\frac{3}{4}}{7} = \frac{\square}{35}$, the $\square$ represents:

A. $\frac{5}{4}$

B. $\frac{15}{4}$

C. $\frac{21}{4}$

D. $\frac{27}{4}$

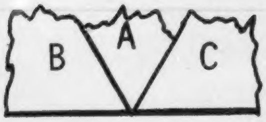
54. Which of the following is true for the sentence $\frac{\overset{5}{\cancel{5}}}{8} = \frac{3}{\square}$?

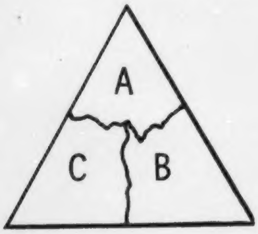
A. $5 \times \square = 3 \times 8$

B. $\square \times 8 = 5 \times 3$

C. $3 \times \square = 5 \times 8$

55. If the triangle below is torn apart on the crooked lines and put together again, like the figure at the right, what is the sum of the measures of the angles?





A. 90°

B. 180°

C. 360°

D. it varies

56. The numeral 32 in base five, (32_{five}) is equivalent to what base ten numeral?

A. 5

B. 12

C. 17

D. 32

FIFTH GRADE
ANSWER KEY

1. B
2. B
3. B
4. B
5. B
6. A
7. B
8. B
9. C
10. C
11. D
12. C
13. B
14. B
15. C
16. C
17. B
18. D
19. C
20. B
21. A
22. D
23. C
24. C
25. B
26. C
27. A
28. B
29. D
30. A
31. C
32. D
33. A
34. D
35. B
36. A
37. A
38. D
39. C
40. A
41. C
42. B
43. D
44. C
45. A
46. A
47. C
48. D
49. D
50. C
51. C
52. C
53. B
54. A
55. B
56. C

SIXTH GRADE

ADMINISTERING INFORMATION

The following instructions to the test administrator assumes the use of machine scorable answer sheets.

The first page of the student booklet introduces him to the answer sheet. Please read this aloud to the class after they have their booklets before them and can follow along. All questions regarding the test format may be answered at this point.

Ball-point or ink will not register on the scoring machine, nor will "X"marks. The child may use a separate sheet for figuring, but should make no random marks on the answer sheet or in the test booklet. The tests are not timed, but the children should be encouraged to work at a steady pace. You may wish to divide the testing session into two parts. This is permissable so long as the booklets and answer sheets are kept secure during the interim.

If the child lacks vocabulary, he may use his text or a dictionary to assist himself, but you should not supply definitions. Frequently, the tests will cover items of learning not a part of your curriculum or in a different format. When this occurs the child should exercise his best logic and intuition to arrive at an answer, but should answer every item on the test.

Items in the test should not be directly discussed before, during or after the test to avoid invalidating this or future tests.

SIXTH GRADE TEST

DO NOT OPEN THE TEST BOOKLET UNTIL
YOUR TEACHER TELLS YOU TO

Fill in your name and other information requested at the top of the answer sheet.

This is an arithmetic test. Read each question or problem carefully. Look at the lettered responses. When you have decided which is the correct answer, blacken in the space between the lines on the answer sheet under the letter of that choice. If you change your mind, erase your first answer completely. Look at the example below.

1. 12 - 5 =

A. 12
B. 5
C. 7
D. 0

1. A. B. C. D. E.
— — ■ — —

Since 7 is the correct answer, the space under the C in the answer space is blackened.

When your teacher tells you to, open your booklet and begin.

MATHEMATICS TEST
SIXTH GRADE

1. If you subtract 5 from 3, the answer should be:

A. An exponent
B. A negative number
C. Zero
D. A positive number

2. Three-fifths is represented by:

A. .6
B. .3
C. .06
D. .03

3. The speed of light is given as 186000 $\frac{\text{miles}}{\text{second}}$.
Written in scientific notation this would appear as:

A. 1.86×10^5
B. 1.86×10^4
C. 1.86×10^3
D. 1.86×10^2

4. 3564 expressed in exponential notation would be:

A. $(3 \times 10^3) + (5 \times 10^2) + (6 \times 10) + 4$
B. $(3 \times 10^2) + (5 \times 10^1) + (6 \times 1) + 4$
C. $(3 \times 10^1) + (5 \times 10^0) + (6 \times 1) + 4$
D. $(3 \times 10^0) + (5 \times 10^{-1}) + (6 \times 1) + 4$

5. The common fraction $\frac{2}{5}$ is equivalent to:

   A. .5

   B. .04

   C. .4

   D. .05

6. $.66\overline{6}$. . . is equivalent to:

   A. $\frac{2}{3}$

   B. $\frac{6}{10}$

   C. $\frac{2}{7}$

   D. $\frac{7}{10}$

7. To completely order the integers, +2, -2, 0, we could only have:

   A. $-2 < 0 < +2$

   B. $-2 < +2 < 0$

   C. $+2 < -2 < 0$

   D. $0 < -2 < +2$

8. Which of the following is NOT a correct replacement for $\square$ in $\frac{2}{5} \times \square = \frac{2}{5}$:

   A. $\frac{1}{1}$

   B. 1

   C. $\frac{2}{2}$

   D. $\frac{1}{2}$

9. $\frac{2}{3} \div \frac{4}{5} = \frac{2}{3} \times N$. Which of the following should be a replacement for N:

A. $\frac{5}{4}$

B. $\frac{5}{3}$

C. $\frac{4}{5}$

D. $\frac{3}{5}$

10. If $\frac{16}{9} \times \frac{3}{2} = \frac{8}{3}$ then $\frac{8}{3} \div \frac{3}{2} = \frac{16}{9}$ or which of the following:

A. $\frac{8}{3} \div \frac{16}{9} = \frac{3}{2}$

B. $\frac{16}{9} \div \frac{3}{2} = \frac{8}{3}$

C. $\frac{8}{3} \times \frac{3}{2} = \frac{16}{9}$

D. $\frac{3}{2} \times \frac{8}{3} = \frac{16}{9}$

11. Consider the rational numbers 3 and 4.

A. $3\frac{3}{4}$ is the smallest rational number between them.

B. $3\frac{2}{4}$ is the smallest rational number between them.

C. $3\frac{1}{4}$ is the smallest rational number between them.

D. There is no smallest rational number between them.

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12. Consider the sequence 5, 3, 1 . . .
The next integer should be:

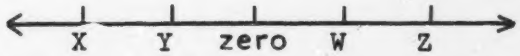
A. 0

B. -1

C. -2

D. -3

13. Consider the number line:



The additive inverse of D is:

A. X

B. Zero

C. W

D. Z

14. An expression equivalent to 2 is:

A. $+\frac{1}{2}$

B. $+\frac{0}{2}$

C. $+\frac{2}{4}$

D. $+\frac{4}{2}$

15. $(2)^3$ means:

A. $2 \times 3 = 6$

B. $2 \times 2 \times 2 = 8$

C. $3 \times 2 = 6$

D. $3 \times 3 \times 3 = 27$

16. $\left(\frac{2}{3} \times \frac{4}{5}\right) \times \frac{7}{9} = \frac{2}{3} \times \left(\frac{4}{5} \times \frac{7}{9}\right)$ is an example of:

A. The identity element of multiplication.

B. The associative property of multiplication.

C. The commutative property of multiplication.

D. The distributive property of multiplication.

17. $\frac{2}{3} \times \frac{3}{4} = \frac{3}{4} \times \frac{2}{3}$ is an example of:

A. The commutative property of multiplication.

B. The associative property of multiplication.

C. The distributive property of multiplication.

D. The identity property of multiplication.

18. $\frac{2}{3} \times \left(\frac{3}{4} + \frac{5}{6}\right) =$

A. $\left(\frac{2}{3} + \frac{3}{4}\right) \times \left(\frac{2}{3} + \frac{5}{6}\right)$

B. $\left(\frac{2}{3} \times \frac{3}{4}\right) + \frac{5}{6}$

C. $\left(\frac{2}{3} \times \frac{3}{4}\right) + \left(\frac{2}{3} \times \frac{5}{6}\right)$

D. $\left(\frac{2}{3} + \frac{3}{4}\right) \times \frac{5}{6}$

19. (-6) + (-2) =

A. (+6) + (+2)

B. (+2) + (-6)

C. (-2) + (-6)

D. (+6) + (-2)

20. Which of the following is always true:

A. There is no rational number between $\frac{1}{3}$ and $\frac{1}{2}$.

B. There is exactly one rational number between $\frac{1}{3}$ and $\frac{1}{2}$.

C. There are exactly ten rational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.

D. There are an infinite number of rational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.

21. 3% is equal to the ratio:

A. $\frac{3}{10}$

B. .3

C. $\frac{3}{100}$

D. .30%

22. 40 is what percent of 60 may be written:

A. $\frac{40}{100} = \frac{N}{60}$

B. $\frac{40}{60} = \frac{N}{100}$

C. $\frac{100}{N} = \frac{40}{60}$

D. $\frac{60}{40} = \frac{N}{100}$

23. Which of the following would be used to convert $\frac{4}{5}$ to a decimal:

A. $\frac{5}{4} = \frac{N}{100}$

B. $\frac{4}{100} = \frac{5}{N}$

C. $\frac{4}{5} = \frac{100}{N}$

D. $\frac{4}{5} = \frac{N}{100}$

24. Find the correct replacement for N in the following:

$\frac{.1}{.02} = \frac{N}{.004}$

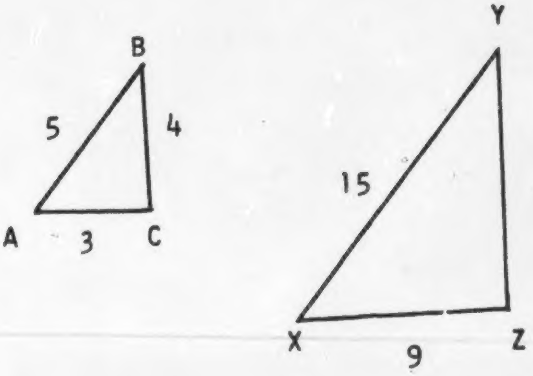
A. .02

B. .08

C. .0002

D. .00008

25. Triangles ABC and XYZ are similar. The correct length for $\overline{YZ}$ is:



A. 16

B. 12

C. 8

D. 4

26. $\frac{1}{2} \div \frac{2}{3} =$

A. $\frac{4}{3}$

B. $\frac{3}{4}$

C. $\frac{3}{2}$

D. $\frac{2}{3}$

27. $\frac{3}{4} \times \frac{2}{3} =$

A. $\frac{5}{12}$

B. $\frac{1}{2}$

C. $\frac{5}{7}$

D. $\frac{6}{7}$

28. Consider the following division problem:

$$\begin{array}{r} \square 6 \quad R\ 14 \\ 93\,\overline{)\,8942} \\ \underline{837} \\ 572 \\ \underline{558} \\ 14 \end{array}$$

The missing number in the $\square$ is:

A. 7

B. 8

C. 9

D. 10

29. (-15) + (-32) + (+8) =

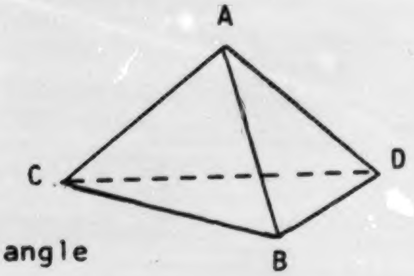
A. +39

B. +25

C. -9

D. -39

30. The 3-dimensional figure ABCD is called a(n):



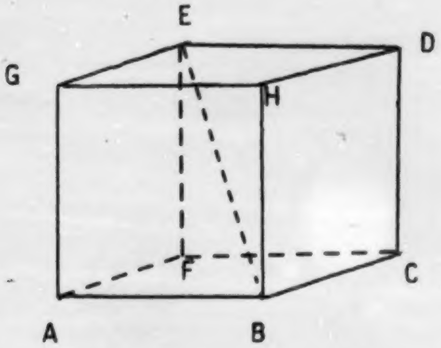
A. equilateral triangle

B. equiangular prism

C. tetrahedron

D. icosahedron

31. Consider the cube:



Line segment BE is called a(n):

A. edge

B. face

C. diagonal

D. vertex

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32. A scalene triangle may also be:

A. equilateral

B. equiangular

C. isosceles

D. right angled

33. Which of the following is never true?

A. A plane is a subset of a point.

B. A point is a subset of a ray.

C. A ray is a subset of a line.

D. A line is a subset of a plane.

34. The circumference of a circle is about how many times the diameter:

A. $1\frac{1}{7}$

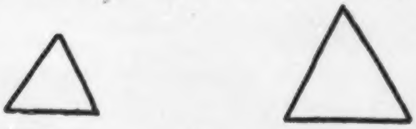
B. $2\frac{1}{7}$

C. $3\frac{1}{7}$

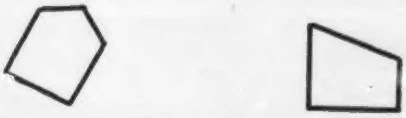
D. $4\frac{1}{7}$

35. In which of the following are the figures congruent:

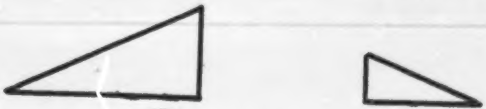
A.



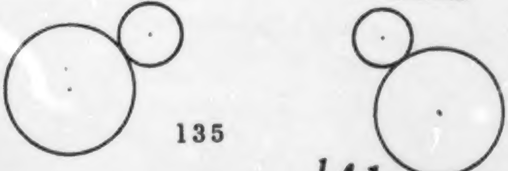
B.



C.

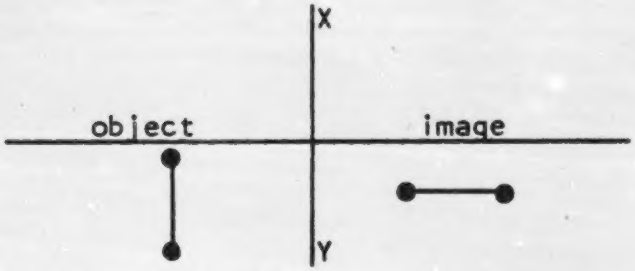


D.

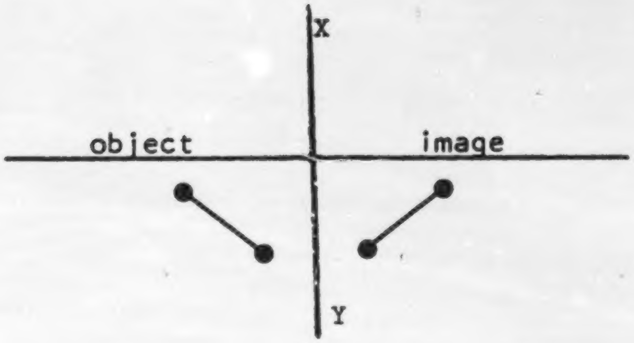


36. Which diagram illustrates that the image is a reflection of the oject about the line XY:

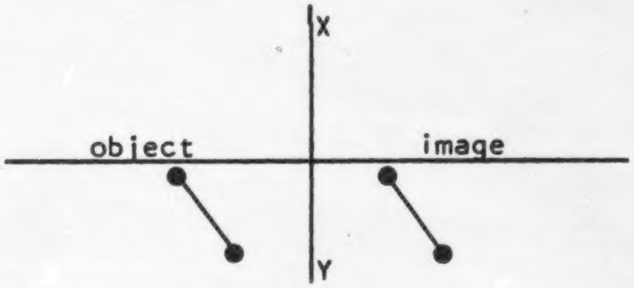
A.


X
object
image
Y

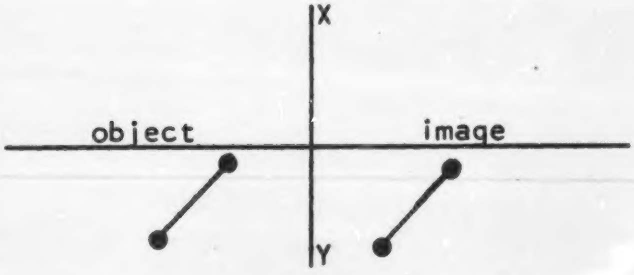
B.


X
object
image
Y

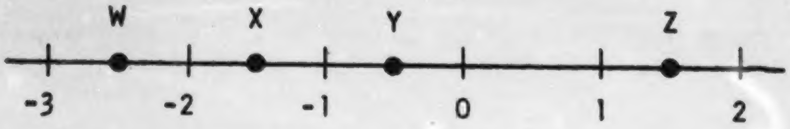
C.


X
object
image
Y

D.


X
object
image
Y

37. Which point represents $-1\frac{1}{2}$:



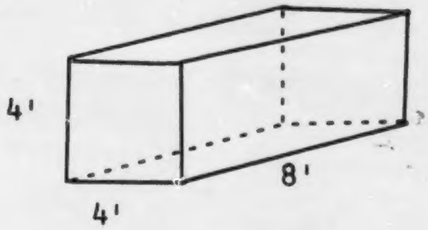
A. W

B. X

C. Y

D. Z

38. The number of cubic feet in the rectangular prism shown is:



A. 128

B. 32

C. 24

D. 16

39. The formula $A = l \times w$ represents:

A. The area of a circle

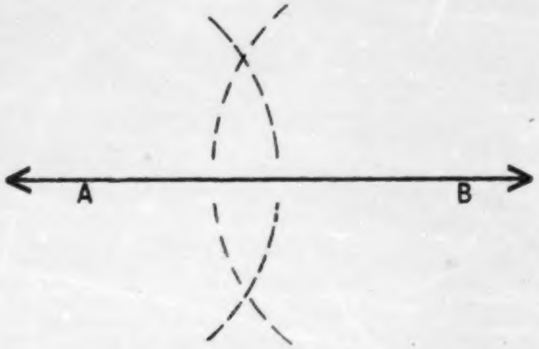
B. The perimeter of a square

C. The area of a rectangle

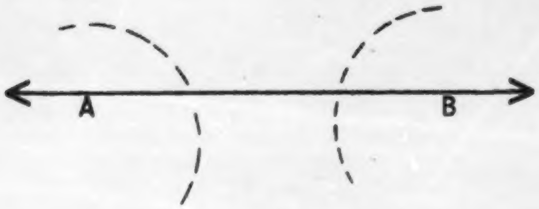
D. The altitude of a triangle

40. You are given a line AB and are asked to construct a line perpendicular to it. Which of the following represents the correct method of beginning?

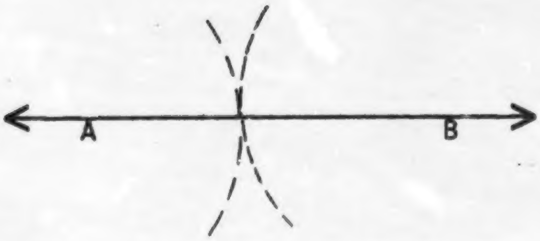
A.



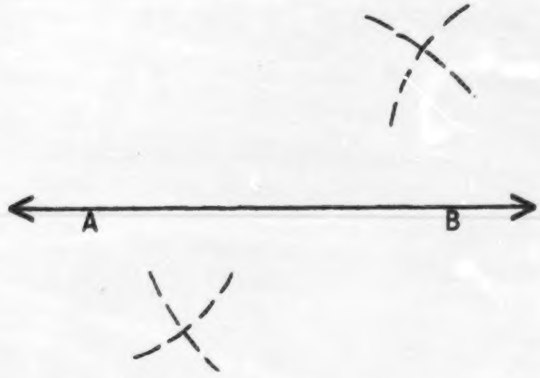
B.



C.

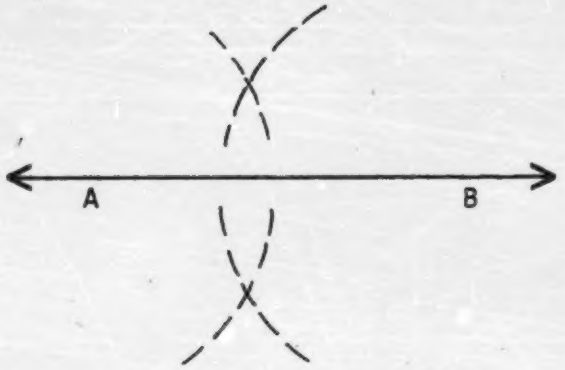


D.

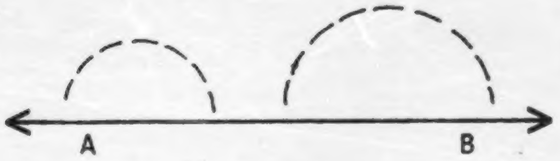


41. You are given a line AB and are asked to construct a line parallel to it. Which of the following represents the correct method of beginning?

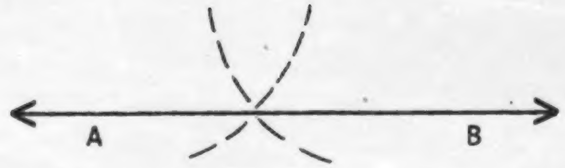
A.



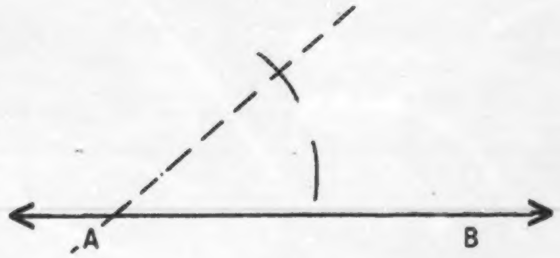
B.



C.

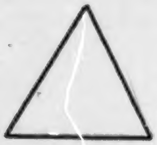


D.

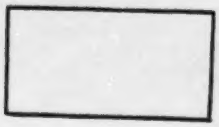


42. Which of the following polygons has the largest perimeter?

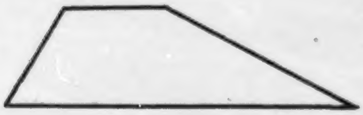
A.



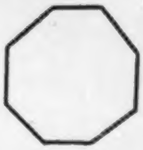
B.



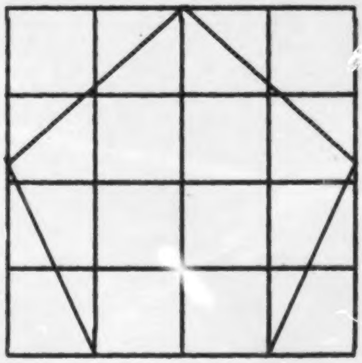
C.



D.



43. The best estimate of the area enclosed by the pentagon among the following is:



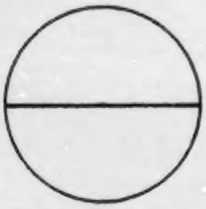
A. 22 sq. units

B. 16 sq. units

C. 10 sq. units

D. 6 sq. units

44. If $C = \pi d$ and $d = 14$ and assuming that $\pi = 3\ 1/7$ then the circumference of the circle is

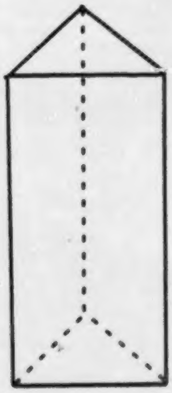


A. 22 in.
B. 28 in.
C. 32 in.
D. 44 in.

45. How many centimeters wide is a 16 millimeter film?

A. .16
B. 1.6
C. 16.0
D. 160

46. If V = 54 cu. in. and B = 9 sq. in.
Then h = :



A. 27
B. 18
C. 6
D. $4\frac{1}{2}$

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47. A rectangle 6.3 wide by 8.2 long has an area between:

A. 6.1 x 8.1 and 6.2 x 8.2
B. 6.2 x 8.1 and 6.4 x 8.3
C. 6.2 + 8.1 and 6.4 + 8.3
D. 6.3 + 8.2 and 6.4 + 8.3

48. A 3 ft. stick casts a shadow of 4 ft., while a flagpole casts a shadow of 60 ft. at the same time. How high is the flagpole?

A. 15 ft.
B. 20 ft.
C. 45 ft.
D. 80 ft.

49. If .45 = □ x .5, then □ =

A. .225
B. 2.25
C. .09
D. .9

SIXTH GRADE
ANSWER KEY

1. B
2. A
3. A
4. A
5. C
6. A
7. A
8. D
9. A
10. A
11. D
12. B
13. D
14. D
15. B
16. B
17. A
18. C
19. C
20. D
21. C
22. B
23. D
24. A
25. B
26. B
27. B
28. C
29. D
30. C
31. C
32. D
33. A
34. C
35. D
36. B
37. B
38. A
39. C
40. A
41. D
42. C
43. C
44. D
45. B
46. C
47. B
48. C
49. D

APPENDIX

DIAGNOSTIC DATA

Following is the coding of items in the 1st grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

FIRST GRADE

PROBLEM	CODE	PROBLEM	CODE
1	1-01-1	31	1-06-1
2	1-01-2		1-15-2
3	1-01-5	32	1-01-3
4	1-02-2	33	1-01-2
5	1-02-1	34	1-01-5
6	1-02-4	35	1-02-2
7	1-04-3	36	1-02-3
8	1-04-1	37	1-02-4
9	1-02-1	38	1-04-5
10	1-02-4	39	1-04-2
11	1-01-4	40	1-02-1
12	1-04-5	41	1-02-1
13	1-03-1	42	1-02-4
14	1-04-4	43	1-04-5
15	1-07-1	44	1-03-2
	1-07-2	45	1-04-4
16	1-07-1	46	1-07-1
17	1-08-1		1-07-2
18	1-08-2	47	1-07-1
19	1-12-1	48	1-08-2
20	1-12-1	49	1-14-5
21	1-14-1	50	1-12-1
22	1-14-2	51	1-12-1
23	1-14-3	52	1-14-1
24	1-14-4	53	1-14-2
25	1-15-1	54	1-14-3
26	1-15-3	55	1-14-4
27	1-15-4	56	1-15-1
28	1-06-1	57	1-15-3
	1-15-2	58	1-15-4
29	1-06-1	59	1-06-1
	1-15-2		1-15-2
30	1-06-1		
	1-15-2		

Following is the coding of items in the 2nd grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

SECOND GRADE

PROBLEM	CODE	PROBLEM	CODE	PROBLEM	CODE
1.....	2-02-1	28.....	2-15-1	50.....	2-06-1
2.....	2-02-5		2-06-1		2-15-1
3.....	2-02-1	29.....	2-15-1	51.....	2-06-1
4.....	2-02-3		2-06-1		2-15-1
5.....	2-02-2	30.....	2-15-1	52.....	2-06-1
6.....	2-03-5		2-06-1		2-15-1
7.....	2-04-6	31.....	2-15-1	53.....	2-06-1
8.....	2-03-3		2-06-1		2-15-1
9.....	2-03-4	32.....	2-04-3	54.....	2-04-2
10.....	2-06-3	33.....	2-08-1	55.....	2-15-4
11.....	2-15-4	34.....	2-10-2	56.....	2-15-3
12.....	2-06-2	35.....	2-08-3	57.....	2-04-6
13.....	2-15-2	36.....	2-08-5	58.....	2-04-4
14.....	2-01-3	37.....	2-12-1	59.....	2-06-3
15.....	2-02-4	38.....	2-02-1	60.....	2-06-3
16.....	2-03-1	39.....	2-02-1	61.....	2-15-5
17.....	2-03-2	40.....	2-02-3	62.....	2-15-2
18.....	2-02-6	41.....	2-02-2	63.....	2-03-2
19.....	2-04-1	42.....	2-03-3	64.....	2-01-2
20.....	2-07-1	43.....	2-03-4	65.....	2-04-5
21.....	2-01-2	44.....	2-03-2	66.....	2-01-3
22.....	2-14-1	45.....	2-14-5	67.....	2-02-6
23.....	2-14-3	46.....	2-14-2	68.....	2-01-1
24.....	2-14-4	47.....	2-14-2	69.....	2-08-4
25.....	2-15-5	48.....	2-06-1	70.....	2-08-5
26.....	2-15-1		2-15-1	71.....	2-14-2
	2-06-1	49.....	2-06-1	72.....	2-08-1
27.....	2-15-1		2-15-1	73.....	2-08-2
	2-06-1			74.....	2-10-1

Following is the coding of items in the 3rd grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

THIRD GRADE

PROBLEM	CODE	PROBLEM	CODE
1	3-02-1	25	3-10-1
2	3-02-2	26	3-10-2
3	3-04-2	27	3-01-1
4	3-02-3	28	3-14-1
5	3-11-1	29	3-04-3
6	3-15-1	30	3-06-4
7	3-05-2	31	3-15-2
8	3-02-1	32	3-01-4
9	3-15-4	33	3-06-5
10	3-03-1	34	3-14-2
11	3-06-1	35	3-02-5
12	3-08-3	36	3-04-4
13	3-12-1	37	3-12-2
14	3-02-5	38	3-15-3
15	3-02-6	39	3-14-3
16	3-03-1	40	3-04-5
17	3-01-2	41	3-12-3
18	3-04-1	42	3-08-2
19	3-05-1	43	3-09-1
20	3-14-4	44	3-03-2
21	3-02-4	45	3-06-3
22	3-04-6	46	3-06-2
23	3-01-3	47	3-08-1
24	3-15-5	48	3-08-1

Following is the coding of items in the 4th grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

FOURTH GRADE

PROBLEM	CODE	PROBLEM	CODE
1	4-04-3	26	4-05-2
2	4-06-1	27	4-01-1
3	4-06-1	28	4-02-3
4	4-06-1	29	4-06-5
5	4-14-1	30	4-05-3
6	4-15-7	31	4-07-1
7	4-05-1	32	4-06-7
8	4-02-2	33	4-15-4
9	4-15-9	34	4-15-5
10	4-04-1	35	4-13-3
11	4-15-8	36	4-01-2
12	4-12-2	37	4-15-6
13	4-03-1	38	4-15-2
14	4-14-2	39	4-10-1
15	4-15-2	40	4-07-1
16	4-14-4	41	4-11-1
17	4-02-1	42	4-05-4
18	4-15-3	43	4-06-6
19	4-08-5	44	4-08-2
20	4-06-2	45	4-06-7
21	4-12-3	46	4-04-2
22	4-14-3	47	4-09-1
23	4-03-1	48	4-08-3
24	4-06-4	49	4-08-4
25	4-06-3	50	4-12-1
		51	4-08-1

Following is the coding of items in the fifth grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

FIFTH GRADE

PROBLEM	CODE	PROBLEM	CODE
1	5-06-4	29	5-14-3
2	5-10-1	30	5-04-6
3	5-12-3	31	5-06-3
4	5-04-2	32	5-09-1
5	5-15-2	33	5-08-1
6	5-13-2	34	5-04-5
7	5-01-6	35	5-05-3
8	5-03-1	36	5-01-3
9	5-14-5	37	5-12-1
10	5-04-1	38	5-12-1
11	5-14-7	39	5-07-3
12	5-13-1	40	5-08-2
13	5-04-4	41	5-08-3
14	5-01-1	42	5-15-3
15	5-06-2	43	5-15-1
16	5-07-1	44	5-15-1
17	5-14-6	45	5-08-4
18	5-02-1	46	5-02-5
19	5-04-4	47	5-06-1
20	5-01-4	48	5-11-1
21	5-07-2	49	5-08-5
22	5-12-2	50	5-02-4
23	5-08-1	51	5-02-3
24	5-14-1	52	5-01-2
25	5-01-5	53	5-05-1
26	5-04-3	54	5-05-2
27	5-06-5	55	5-14-2
28	5-14-4	56	5-02-2

Following is the coding of items in the 6th grade test as they relate to the behavioral objectives in Wisconsin K-6 Mathematics Guidelines. The first numeral in the code relates to grade level. The second numeral relates to horizontal strand number (1-15). The strands are found on the fold-out pages. The third numeral is the sub-objective as numbered in the Guideline.

SIXTH GRADE

PROBLEM	CODE	PROBLEM	CODE
1	6-01-1	26	6-06-1
2	6-02-1	27	6-06-1
3	6-02-2	28	6-06-2
4	6-02-3	29	6-06-3
5	6-02-4	30	6-07-1
6	6-02-4	31	6-07-2
7	6-03-1	32	6-08-1
8	6-04-1	33	6-08-2
9	6-04-2	34	6-08-3
10	6-04-3	35	6-10-1
11	6-04-4	36	6-09-1
12	6-04-5	37	6-12-3
13	6-04-6	38	6-14-1
14	6-04-7	39	6-14-4
15	6-04-8	40	6-13-1
16	6-04-9	41	6-13-2
17	6-04-9	42	6-14-2
18	6-4-10	43	6-14-3
19	6-4-11	44	6-14-5
20	6-4-12	45	6-14-6
21	6-05-1	46	6-14-7
22	6-05-2	47	6-14-8
23	6-05-3	48	6-14-9
24	6-05-4	49	6-15-1
25	6-05-5		

In addition to correlating missed test items with objectives, which can be done using the above information, it is possible to compare results on a given objective within a district, school or class to broader results on the objective. The following charts show percentages of students responding correctly to items based on specific objectives. If more than one test item was included for a specific objective, the average of results for the several items was computed for the objective.

The selected stratified sample of Wisconsin students tested to obtain data for the following charts was determined as follows: First all Wisconsin public school districts were stratified according to size of city, size of district, socio-economic level, per-pupil expenditure for education, and per-pupil valuation of district. School districts then were drawn at random from three categories, under 1000 elementary students, between 1000 and 5000 elementary students, and "metropolitan". Thus a list of 13 districts was obtained including 5 in the first category, 4 in the second category, and 4 in the third category. A list of alternates was similarly established, 8 in the first category, 7 in the second, and 5 in the third. Writing committee members then arbitrarily selected districts in 13 different geographical areas of the state and made arrangements for tests to be given (each grade level) in 8 Milwaukee classrooms, 9 other "metropolitan" classrooms (three per district), 12 classrooms in districts with from 1000 to 5000 elementary students, and 10 classrooms in districts having less than 1000 elementary students. Approximately 1000 students were given each test.

FIRST GRADE

Objective	% of Sampled Students Responding Correctly
1-01-1	79
1-01-2	60
1-01-3	91
1-01-4	76
1-01-5	58
1-02-1	81
1-02-2	65
1-02-3	85
1-02-4	74
1-03-1	83
1-03-2	80
1-04-1	63
1-04-2	77
1-04-3	82
1-04-4	33
1-04-5	74
1-06-1	75
1-07-1	65
1-07-2	68
1-08-1	61
1-08-2	68
1-12-1	52
1-14-1	57
1-14-2	66
1-14-3	73
1-14-4	90
1-14-5	55
1-15-1	67
1-15-2	75
1-15-3	66
1-15-4	64

SECOND GRADE

Objective	% of Sampled Students Responding Correctly	Objective	% of Sampled Students Responding Correctly
2-01-1	65	2-14-1	58
2-01-2	83	2-14-2	52
2-01-3	51	2-14-3	84
2-02-1	64	2-14-4	64
2-02-2	62	2-14-5	64
2-02-3	90	2-15-1	81
2-02-4	67	2-15-2	51
2-02-5	76	2-15-3	44
2-02-6	63	2-15-4	65
2-03-1	82	2-15-5	66
2-03-2	64		
2-03-3	91		
2-03-4	86		
2-03-5	81		
2-04-1	40		
2-04-2	41		
2-04-3	62		
2-04-4	57		
2-04-5	60		
2-04-6	73		
2-06-1	81		
2-06-2	74		
2-06-3	56		
2-07-1	46		
2-08-1	27		
2-08-2	21		
2-08-3	42		
2-08-4	86		
2-08-5	79		
2-10-1	63		
2-10-2	41		
2-12-1	37		

THIRD GRADE

Objective	% of Sampled Students Responding Correctly	Objective	% of Sampled Students Responding Correctly
3-01-1	63	3-12-1	61
3-01-2	55	3-12-2	17
3-01-3	56	3-12-3	40
3-01-4	36	3-14-1	25
3-02-1	73	3-14-2	40
3-02-2	81	3-14-3	32
3-02-3	76	3-14-4	55
3-02-4	47	3-15-1	87
3-02-5	41	3-15-2	48
3-02-6	46	3-15-3	48
3-03-1	72	3-15-4	75
3-03-2	29	3-15-5	58
3-04-1	63		
3-04-2	65		
3-04-3	35		
3-04-4	53		
3-04-5	40		
3-04-6	53		
3-05-1	47		
3-05-2	62		
3-06-1	61		
3-06-2	24		
3-06-3	29		
3-06-4	52		
3-06-5	39		
3-08-1	31		
3-08-2	38		
3-08-3	64		
3-09-1	28		
3-10-1	64		
3-10-2	55		
3-11-1	28		

FOURTH GRADE

Objective	% of Sampled Students Responding Correctly
4-01-1	38
4-01-2	25
4-02-1	47
4-02-2	41
4-02-3	42
4-03-1	44
4-04-1	73
4-04-2	25
4-04-3	88
4-05-1	70
4-05-2	33
4-05-3	41
4-05-4	20
4-06-1	89
4-06-2	53
4-06-3	41
4-06-4	42
4-06-5	45
4-06-6	28
4-06-7	31
4-07-1	39
4-08-1	22
4-08-2	28
4-08-3	26
4-08-4	11
4-08-5	54
4-09-1	26
4-10-1	25
4-11-1	30
4-12-1	19
4-12-2	55
4-12-3	43
4-13-3	60
4-14-1	78
4-14-2	71
4-14-3	68
4-14-4	81
4-15-2	49
4-15-3	66
4-15-4	41
4-15-5	32
4-15-6	33
4-15-7	82
4-15-8	86
4-15-9	66

FIFTH GRADE

Objective	% of Sampled Students Responding Correctly	Objective	% of Sampled Students Responding Correctly
5-01-1	43	5-08-1	51
5-01-2	21	5-08-2	37
5-01-3	51	5-08-3	30
5-01-4	41	5-08-4	35
5-01-5	37	5-08-5	25
5-01-6	69	5-09-1	36
5-02-1	49	5-10-1	92
5-02-2	15	5-11-1	42
5-02-3	16	5-12-1	39
5-02-4	23	5-12-2	37
5-02-5	46	5-12-3	42
5-03-1	48	5-13-1	48
5-04-1	36	5-13-2	42
5-04-2	79	5-14-1	58
5-04-3	39	5-14-2	12
5-04-4	41	5-14-3	29
5-04-5	38	5-14-4	20
5-04-6	46	5-14-5	53
5-05-1	31	5-14-6	40
5-05-2	20	5-14-7	51
5-05-3	38	5-15-1	33
5-06-1	27	5-15-2	61
5-06-2	55	5-15-3	34
5-06-3	49		
5-06-4	68		
5-06-5	50		
5-07-1	54		
5-07-2	49		
5-07-3	32		

SIXTH GRADE

Objective	% of Sampled Students Responding Correctly	Objective	% of Sampled Students Responding Correctly
6-01-1	42	6-12-3	32
6-01-2	24	6-13-1	30
6-02-2	24	6-13-2	27
6-02-3	60	6-14-1	35
6-02-4	26	6-14-2	57
6-03-1	27	6-14-3	37
6-04-1	40	6-14-4	40
6-04-2	36	6-14-5	19
6-04-3	28	6-14-6	28
6-04-4	44	6-14-7	31
6-04-5	35	6-14-8	26
6-04-6	41	6-14-9	41
6-04-7	45	6-15-1	34
6-04-8	48		
6-04-9	30		
6-4-10	19		
6-4-11	63		
6-4-12	31		
6-05-1	45		
6-05-2	38		
6-05-3	48		
6-05-4	46		
6-05-5	46		
6-06-1	58		
6-06-2	66		
6-06-3	36		
6-07-1	25		
6-07-2	49		
6-08-1	38		
6-08-2	25		
6-08-3	28		
6-09-1	42		
6-10-1	48		

ADDITIONAL TECHNICAL INFORMATION

During the processing of data obtained from the sample, discrimination indices were computed for all test items. They were averaged for each grade level, as follows:

Grade Level	Mean Discrimination Index
First	.46
Second	.43
Third	.42
Fourth	.33
Fifth	.35
Sixth	.34

Formula used to compute discrimination indices was

$$D.\ I. = \frac{N_h - N_1}{n}$$

Where D. I. is the discrimination index, N_h is the number in the "high group" (upper 27%) answering the item correctly, N_1 is the number in the "low group" (lower 27%) answering the item correctly, and n is the total number in the high group (same as the total number in the low group).

Reliability measures were determined for the various grade level tests using the Kuder-Richardson Formula #20. Sample used was the one described previously. Results:

FIRST GRADE	.937
SECOND GRADE	.931
THIRD GRADE	.858
FOURTH GRADE	.799
FIFTH GRADE	.820
SIXTH GRADE	.792

VALIDITY

A survey conducted three years after publication of Guidelines to Mathematics, K-6 indicated that the mathematics program outlined in the guide is well accepted by Wisconsin Mathematics Educators. Sixty three per cent of the respondents rated the program "very good" and twenty five per cent rated it "excellent". This professional acceptance of the objectives in the guide enhances the validity of WMT. The writing committee unanimously agreed to declare content validity for the test because of its correlation with the objectives listed in the state guide.

In addition to the professional acceptance of the objectives, several independent studies made by university students have shown that most contemporary elementary mathematics textbook series contain the topics outlined in the state guide. School districts using up-to-date contemporary mathematics textbooks can therefore be assured that accepting the objectives in the guide as reasonable for their programs is logical, and that WMT is a valid instrument to use in their assessment activities.